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WHAT MAKES FUSION CELLS EFFECTIVE?

by

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December 2009

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WHAT MAKES FUSION CELLS EFFECTIVE?

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ABSTRACT

Intelligence Fusion Cells (or Fusion Centers) can be an effective means to best leverage the capabilities of various organizations and agencies in pursuit of a particular mission or objective. This thesis will examine what characteristics enable three types (DoD-led, State and Local Fusion Centers, and DOJ/OGA-led fusion cells) of fusion cells to be most effective. There is no set definition for how to measure “effectiveness” across types of fusion cells. This fact created several research issues which are analyzed and discussed at length.

After examining what makes these fusion cells effective, the authors will explore what lessons learned from fusion cells the U.S. government can apply to the federal level to improve interagency cooperation and efficacy. The lessons from a more micro-level (fusion cells) can be applied to the more macro-level (interagency cooperation).

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LIST OF ACRONYMS AND ABBREVIATIONS

CIA	Central Intelligence Agency
COIN	Counterinsurgency
CONUS	Continental United States
DHS	Department of Homeland Security
DoD	Department of Defense
DOJ	Department of Justice
FBI	Federal Bureau of Investigation
FC	Fusion Cell or Fusion Center
FM	Field Manual
JFCOM	Joint Forces Command
JP	Joint Publication
JTTF	Joint Terrorism Task Force
K/C	Kill / Capture
NSA	National Security Agency
NSDD	National Security Decision Directive
OCONUS	Outside the Continental United States
OGA	Other Government Agency
SLFC	State and Local Fusion Cell
USG	United States Government

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EXECUTIVE SUMMARY

What makes Fusion Cells (FC) effective?

Are we lucky or are we good? Why have there not been any more 9/11s? A partial answer to this question can be found in the FC. FCs are designed to bring together analytical intelligence expertise from multiple agencies and focus their efforts specifically on gaining actionable intelligence to kill, capture, or disrupt terrorists and their affiliates. FC performance varies greatly across both time and individual fusion cells. Our research will define what a high-performance FC looks like and identify the factors that lead to the successful performance of a FC.

A thorough understanding of what makes these interagency organizations perform has important implications for the overarching United States Government (USG) counterterrorism effort. We believe that interagency FCs are an excellent proxy by which to gain insight into a more effective USG counterterrorism effort. Our findings suggest that an FC's access to decision makers and its decision making process/information flow are the two most important variables related to effectiveness. Additional findings indicate that FC agency membership, leadership, and FC member empowerment are also important variables related to effectiveness. We present several micro (FCs) and macro level (USG) recommendations on how to improve USG counter-terrorism efforts.

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I. SETTING THE STAGE

No terrorist group has successfully attacked the United States homeland since September 11, 2001. Nevertheless, global terrorist attacks have risen from 348 in 2001 to 14,499 attacks in 2007.¹ These statistics show an interesting dynamic concerning the United States and terrorism; no attacks on United States soil, yet a more than forty-fold increase in attacks worldwide. Is the fact that there have been no follow-on attacks on U.S. soil the result of U.S. foreign policy? A successful governmental structure to defend against terrorist attacks? Dumb luck? Or perhaps our enemies have made a strategic choice not to attack?

A. BACKGROUND

The United States deployed forces to Afghanistan beginning in October 2001 and invaded Iraq in May of 2003. The U.S. government (USG) states that both actions were done as part of the U.S. global war on terror post-9/11. If the U.S. has approximately 135,000 troops in Iraq (six years after the invasion) and 30,000 troops in Afghanistan (almost eight years after the invasion), but terrorist attacks continue to rise worldwide, what does this say about the success or failure of the U.S. response to terrorism?

Post-9/11, the U.S. has had to protect itself against another attack against the homeland. To do this successfully requires a level of synchronization and information sharing that has never existed before in the USG. In an effort to accomplish this, various agencies of the USG have created Intelligence Fusion Cells (FC) to better achieve counter-terrorism synchronization (note: fusion cell and fusion center are used interchangeably throughout this thesis).

Generally speaking, an FC is an ad-hoc organization manned by intelligence analysts from different USG agencies. The specific agencies present in an FC vary

¹ U.S. Department of State 2001 and 2007 Country Reports on Terrorism retrieved from <http://www.state.gov/s/ct/rls/crt/2001/pdf/index.htm> and <http://www.state.gov/s/ct/rls/crt/2007/103716.htm>.

depending on that FC's focus (i.e., CONUS vs. OCONUS). FCs produce intelligence products for senior USG decision makers. For example, a typical OCONUS FC produces targeting packages on high-value targets (terrorists) in a given geographical area. Our research question seeks to examine this particular facet of the U.S. response to terrorism—specifically, what makes FCs effective?

We believe that a thorough understanding of what makes these interagency organizations work is critical to the overall USG counterterrorism effort. It is our belief that if we continue with the USG counterterrorism efforts of the past eight years, then this problem set (radical Islamic terrorism) will continue indefinitely, with more USG failure than success. We believe that FCs can, from an organizational perspective, provide critical insight on how to improve the overall USG counterterrorism effort.

How can the U.S. get back down to 348 worldwide terrorist attacks from 14,499? It is our hypothesis that some of the critical answers to this question are found in FCs. Potentially, an FC's flatness, agility, and ability to rapidly distribute and coordinate intelligence is a micro-example of a highly efficient model that can be applied at a national level to achieve similar effects. Specifically, we want to explore whether access to decision makers, interagency cell membership, level of individual empowerment, decision making process, and information flow are critical to the effectiveness of FCs.

B. THEORY

Applicable theory for fusion cells is drawn from three primary sources: (1) USG Interagency collaboration, (2) Intelligence Reform literature, and (3) Organizational design literature. Interagency collaboration theory primarily derives from the ongoing efforts to reform the National Security structure of the USG.² Intelligence reform literature seeks to address the failure of 9/11 from an intelligence perspective. Organizational design theory takes the tact that there are unique design aspects to how

² Project on National Security Reform, *Forging a New Shield*, (Project on National Security Reform: Arlington, VA, December 2008), downloaded from <http://pnsr.org/data/files/pnsr%20forging%20a%20new%20shield.pdf> on 14 January 2009.

USG interagency efforts function and can be improved upon. Currently, there is no theoretical literature specific to fusion cells.

Chapter II discusses these sources of literature to construct a framework for understanding the origins and functions of FCs. We will then synthesize this theoretical base to identify the five independent variables that we propose to be related to FC effectiveness: access to decision makers, cell membership, level of individual empowerment, the decision making process/information flow.

C. INTERAGENCY EFFECTIVENESS

An FC is an example of a USG interagency collaborative effort. FCs must successfully integrate information from disparate sources and work together to be effective. What is effectiveness and how does one measure it? These are questions that Chapter III tackles and are some of the most difficult to answer for this thesis. Given the variability across FCs, is there a standard that can be applied to define effectiveness? Once effectiveness is defined, how then can you measure it? Our means to capture this was to (1) ask each person surveyed to define what effectiveness means for their FC and (2) to define how influential their FCs products are in achieving a counter-terrorism end state. Furthermore, we will conduct follow up interviews with FC end users. The answers to these questions are critical to our study.

This thesis treats FCs as a sub-set of a larger problem; interagency collaboration. From personal experience, each of the authors has experienced how the USG interagency process functions. We hope that our study of FCs will shed some light on how the interagency can work together more effectively. Chapter III examines the USG interagency and how the FC fits into the overall process.

D. METHODOLOGY

We have built upon the survey work of Thomas, Hocevar, and Jansen concerning interagency collaboration to develop a survey on Interagency Intelligence Fusion Cells.³ Thomas et al. sought to measure what factors facilitated or hindered interagency collaboration. From this analysis, they developed a survey they administered to senior level managers within the Department of Defense acquisition field and Department of Homeland Security. Using their work as a starting point for our efforts, we developed a survey designed to capture how effective FCs are (dependent variable) and what factors influenced that effectiveness (independent variables).

From our experience on FCs and from the literature reviewed, we believe that access to decision makers, interagency membership, level of individual empowerment, and style of decision making process and internal information flow are critical aspects to FC effectiveness. These independent variables are defined as follows:

1. Access to decision makers: the relationship the FC has with senior level USG personnel who can who can authorize and/or direct action on an FC product.
2. Interagency membership: the number of USG agencies that have personnel serving on an FC, the experience level of those personnel, and the preparation and support given to them from their parent agency.
3. Level of individual empowerment: the level of authority a given agency has delegated to the individual(s) from that agency serving on an FC.
4. Decision-making process/Information flow: the manner in which the FC functions internally (hierarchical or collaborative) and the rapidity with which

³A survey methodology and explanation of these factors from an organizational design perspective are found in Gail F. Thomas, Susan P. Hocevar, and Erik Jansen, *A Diagnostic Approach to Building Collaborative Capacity in an Interagency Context* (Monterey, Ca.: Naval Postgraduate School, 2006).

information (intelligence, operational, functional) flows both within the FC and between the FC and the larger intelligence community.

5. Leadership: leaders who enable, encourage, and guide the FC and who successfully represent the FC to member agencies and decision makers.

Chapter IV discusses in detail the strengths and shortcomings of our survey. We distributed our survey to over 4,000 individuals from dozens of FCs in both the continental United States and overseas. We personally interviewed 20 individuals associated with FCs (FC members, FC leadership, and FC consumers) for background information and amplifying data. We acknowledge and discuss in this chapter issues of sample size, characteristics of FCs, measures of effectiveness, time series data issues, dependent variable measurement, and survey question bias. In essence, this chapter discusses what steps we took to moderate the flaws inherent with this measurement technique.

Our hypothesis is that the most effective FC's maximize access to decision makers, have the appropriate and necessary interagency members, are empowered (from their parent organization), and a collaborative decision-making process with a high degree of information flow within and without the FC. This chapter establishes the means by which we sought to prove his hypothesis and define what effectiveness is for FCs. Although survey research has inherent methodological problems, we believe it was the best means by which to test our hypothesis due to the nature of our subject, little if any previous research and the fluid nature of FC membership. The chapter's conclusion discusses other potential methods to study FCs for future research.

E. SURVEY RESULTS

Chapter V presents the results of our surveys. We used standard statistical techniques (regression analysis and descriptive statistics) to analyze and present the data. We utilized descriptive statistics to highlight the item level results that characterized the

stronger and weaker aspects of FCs. We used regression analysis to determine the nature of the relationship between our independent (access to decision makers, cell membership, level of individual empowerment, and internal decision-making process/information flow) and dependent variables (FC effectiveness). Additionally, we discuss the results from our surveys and discuss the demographic background of survey participants. Chapter V includes a section discussing several measurement problems and issues with our dependent variable (effectiveness) and FCs.

F. RECOMMENDATIONS

Chapter VI is split into two sections: micro and macro recommendations. The micro section discusses in detail what lessons are learned from our study that can help improve the effectiveness of FCs. The macro section broadens the scope and present what we think are the most important lessons learned from studying FCs that are applicable to USG interagency cooperation. Positive or negative, these results can help practitioners in the interagency improve their output. We hope that the results of this thesis can inform participants, leaders, and decision makers throughout the USG and improve the performance of interagency efforts.

II. LITERATURE REVIEW

A. INTRODUCTION

The question of “what makes fusion cells effective?” is not covered in any detail or depth in the available unclassified literature. The existing applicable theory for operation of fusion cells is drawn from three primary sources: (1) Intelligence reform literature, (2) organizational design literature, and (3) publications from U.S. government departments or public institutions focused on fusion cells. This chapter examines what defines fusion cells or centers then, building on existing definitions, advance a more comprehensive definition. Following that is a review of the previously mentioned primary sources of theory for fusion cell operations and how they apply to this thesis.

Intelligence reform literature primarily examines the ongoing efforts to reform the national security structure of the USG and seeks to address the failures resulting in the 9/11 attacks from an intelligence perspective. Organizational design theory provides some innovative concepts which can be applied to how fusion cells are organized. A growing body of literature comes from U.S. government departments and public institutions, specifically organizations involved with the increasing numbers of State and Local Fusion Cells (SLFC) operating throughout the nation. The various organizations that are part of, and work with, the SLFCs have generated numerous conferences, articles, and other publications which help provide some theory for operating effective fusion cells. Given that the vast majority of fusion cells are post 9/11 creations, the theoretical background on fusion cells is not yet robust nor highly developed. We examine each of these three sources later in this chapter.

B. DEFINING FUSION CELLS

The definition of a fusion cell is directly correlated with the perspective of the organization providing the definition. Common threads or phrases found in most definitions include: collaboration, two or more agencies, detect, and prevent. Existing literature on the topic is helpful in clarifying what each organization considers as the

exact definition of a fusion cell. Included below are several of the most representative definitions in the literature. However, the specific definition depends on the organization.

The DHS and DOJ Fusion Center Guidelines from August 2006 offered that a fusion center is “a collaborative effort of two or more agencies that provide resources, expertise, and/or information to the center with the goal of maximizing the ability to detect, prevent, investigate, and respond to criminal and terrorist activity.”⁴ Congress, as part of its 2007 Implementing Recommendations of the 9/11 Commission Act, defined fusion centers as:

A collaborative effort of 2 or more Federal, State, local, or tribal government agencies that combines resources, expertise, or information with the goal of maximizing the ability of such agencies to detect, prevent, investigate, apprehend, and respond to criminal or terrorist activity.⁵

Department of Defense joint doctrine does not have a formal definition of what a fusion cell is. However, it defines “fusion” as: “In intelligence usage, the process of examining all sources of intelligence and information to derive a complete assessment of activity.”⁶ Joint Publication 2-0 goes on to elaborate that:

Fusion is the process of collecting and examining information from all available sources and intelligence disciplines to derive as complete an assessment as possible of detected activity. It draws on the complementary strengths of all intelligence disciplines, and relies on an all-source approach to intelligence collection and analysis.

It is interesting to note that the term “fusion center” is marked for deletion in future iterations of JP 2-0.⁷ Instead of removing this term from doctrine, the authors recommend that it should be maintained and further developed for the military to utilize.

⁴ U.S. Department of Justice, *Fusion Center Guidelines: Developing and Sharing Information and Intelligence in a New Era* (Washington, DC, 2006), 2.

⁵ U.S. Congress, PUBLIC LAW 110–53: IMPLEMENTING RECOMMENDATIONS OF THE 9/11 COMMISSION ACT OF 2007. (Washington, DC: GPO, 2007), 121 STAT. 322.

⁶ U.S. Joint Chiefs of Staff, *Joint Publication 2-0, Joint Intelligence* (Washington, DC: Joint Staff, 2007), GL-9.

⁷ U.S. Joint Chiefs of Staff, *Joint Publication 2-0, Joint Intelligence* (Washington, DC: Joint Staff, 2007), GL-9., xiv.

One additional definition for a fusion cell from a thesis on homeland security described it as, “A physical location where analysts receive, process, and analyze all-source information and synthesize their analysis into intelligence products suitable for dissemination to relevant agencies and officials.”⁸ All of these definitions attempt to describe the process in terms (depending on the specific definition) of who, what, where, when, and why.

The various definitions for fusion cells essentially point to the same end state: to make the sum (impact) of the fusion cell greater than its individual members would be able to accomplish alone. We offer the following as a definition for fusion cells: a physical space wherein two or more organizations combine personnel, resources, and information in a synergistic effort designed to aid the mission on a magnitude greater than unilateral efforts could provide.

C. INTELLIGENCE REFORM LITERATURE

Intelligence reform literature has a lengthy history. For this thesis, we focused on the body of work which arose from the failure of the U.S. intelligence community in the 9/11 attacks. As it relates to fusion cells, this literature generally highlights the need for fusion cells but does not present specifics. The most insightful work in this category is from Amy Zegart’s *An Empirical Analysis of Failed Intelligence Reforms Before September 11*, which analyzes U.S. intelligence reform efforts post Cold War to the present. She proposes several possible theories (primarily organizational adaption) and examines them given the various commission reports and congressional testimony. She concludes that the conditions for the intelligence community to miss the 9/11 attack occurred despite the fact that policy makers knew of the threat and of the organizational deficiencies in the intelligence community. These conditions included internal resistance

⁸ William Forsyth, “State and Local Intelligence Fusion Centers: An Evaluative Approach In Modeling a State Fusion Center” (Master’s thesis, Naval Postgraduate School, 2005), 67.

to reform and institutional barriers hindering the fixing of problems with different agencies working together to protect America.⁹

Two works that argue for flattened, less hierarchical fusion elements as a way to improve information sharing and data flow are *Uncertain Shield* by Richard Posner and *Analyzing Intelligence*, edited by Roger George and James Bruce. Posner notes that “In a centralized system, sharing follows an inverted-V pattern: crucial information flows up the hierarchy to the decision-making level from one agency and down the hierarchy to another, creating delay and a risk of losing or garbling vital information.”¹⁰ In *Analyzing Intelligence*, Timothy Smith’s chapter adds the idea of “Integrated Project Teams,” which require a new, flatter way of doing business to break through “stove-piped chains of command with a new system of horizontal integration within and across organizations and the community as a whole.”¹¹

Other sources of intelligence reform literature that do not have a direct impact on this thesis, but may be of use to future research on fusion cells, include: the 9/11 Commission Report; the resulting Congressional recommendations for implementation; and various articles regarding the report that provide some data on the roles of fusion cells, legal implications to CONUS fusion cells and their structure. Likewise, the Partnership for National Security Reform (PNSR) publishes works such as *Forging A New Shield* and *Turning Ideas Into Action* which may present useful ideas for successful fusion cells.¹²

Unfortunately, many of the intelligence reform articles cover aspects of fusion cells only tangential to our research (such as civil liberty and constitutional issues related

⁹ Amy Zegart, “An Empirical Analysis of Failed Intelligence Reforms Before September 11,” Political Science Quarterly 121, no. 1, <http://www.psqonline.org> (accessed June 25, 2009).

¹⁰ Richard Posner, *Uncertain Shield: The US Intelligence System in the Throes of Reform* (Stanford: Hoover Institute, 2006), 68.

¹¹ Timothy Smith, “Predictive Warning: Teams, Networks, and Scientific Method,” in *Analyzing Intelligence: Origins, Obstacles, and Innovations*, eds. Roger George and James Bruce, (Washington: Georgetown University Press), 2008, 274.

¹² Partnership on National Security Reform, Major Reports, <http://www.pnsr.org/web/page/682/sectionid/579/pagelevel/2/interior.asp> (accessed August 18, 2009).

to intelligence gathering as it pertains to counter-terrorism). Nevertheless, intelligence reform literature does provide the theoretical explanation for why fusion cells are necessary and Chapter III will explore this section of literature further.

D. ORGANIZATIONAL DESIGN LITERATURE

As the organizational design literature relates to fusion cells, one of the key works is Henry Mintzberg's 1980 article "Organizational Design: Fashion or Fit?" In this article, Mintzberg discusses the relationship between an organization's design and its overall effectiveness. Most applicable to the variety of fusion cell structures currently in existence is his idea of the "adhocracy" configuration. Mintzberg's article provides a framework to help explain that the wide variety of fusion cell designs is good, provided they accomplish their particular assigned mission.¹³

Richard Daft's *Organizational Theory and Design* contributes the concept of how the external environment influences organizations. Organizations operating in a highly unstable and complex environment require extensive "boundary spanning" and many integrative roles in the organization. Daft also highlights the need for what he terms "horizontal communication" as uncertainty in the environment increases. Examples of this horizontal communication are improved information systems, task forces, and a full-time "integrator" to help ensure cross-communication.¹⁴ Later in this thesis, we will illustrate why these items are critical to fusion cell success.

Another scholar with worthwhile contributions to our thesis is Charles Perrow. He argues that a large organization such as FEMA failed to respond capably to a massive disaster—Hurricane Katrina—due to lack of "flexibility and innovation" coupled with following a set of rules, which may not have been applicable to the situation. Perrow's argument helped model our variable of decision making in fusion centers, with a focus on

¹³ Henry Mintzberg, "Organizational Design: Fashion or Fit," *Harvard Business Review*, January 1, 1981.

¹⁴ Richard Daft, *Organizational Theory and Design*, 6th ed. (Thomson-South Western, 1997), 43.

flexible, decentralized decision making.¹⁵ Readers who are interested in sociological aspects of organizations should consider some of Perrow's earlier works such as *Organizational Analysis*.

Other important contributions include Weick and Sutcliffe's 2001 *Managing the Unexpected: Assuring High Performance In An Age Of Complexity*. This is a study of effectiveness in high-stress organizations where the price of failure can be exceedingly high. Their study looks at "high reliability organizations" (HROs). These are organizations that draw their strength from an inherent ability to maintain reliability in a highly complex environment. Weick and Sutcliffe's study shows the importance of flattened decision making processes in high-stress environments varying from a U.S. Navy aircraft carrier to an urban hospital emergency room. The study focuses on environments where life-and-death decisions may need to be made instantly by very junior personnel, and how that is encouraged but balanced against maintaining hierarchy and order.¹⁶ Weick and Sutcliffe illustrate two items that we believe are key to successful fusion cells: the importance of flattened decision making and information flow while still emphasizing leadership to ensure order and mission accomplishment. Organizational design literature, as it relates to Fusion Cells, provides the theoretical basis for relating performance to structure.

E. LITERATURE FROM U.S. GOVERNMENT OR PUBLIC ORGANIZATIONS FOCUSED ON FUSION CELLS

U.S. government publications pertaining to fusion cells generally come from the Department of Defense, government agencies teaming with educational institutions, and the Department of Homeland Security. Each of these represent different foci and emphasis in their writings related specifically to each organization's perspective. Literature on fusion cell operation is still evolving but is improving and building on previous material in both depth and sophistication.

¹⁵ Charles Perrow, "Using Organizations: The Case of FEMA," *Homeland Security Affairs* I, no. 2 (Fall 2005), <http://www.hsj.org/?fullarticle=1.2.4> (accessed September 13, 2009).

¹⁶ Karl Weick and Kathleen Sutcliffe, *Managing the unexpected: assuring high performance in an age of complexity* (University of Michigan Business School management series, 2001).

A review of applicable Department of Defense (DoD) doctrine (service field manuals, Joint Publications), service education and lessons learned references showed an almost exclusive focus on service-centric or DoD-centric fusion. These works do not take into account or discuss in any detail other organizations in a fusion cell. For example, Joint Publication (JP) 2-0 contains the joint doctrine for intelligence that specifies what the Joint Chiefs of Staff consider requirements for successful collaboration. In the section on Joint, Interagency, and Multinational Intelligence Sharing and Cooperation JP 2-0 states, “This type of collaborative intelligence sharing environment must be capable of generating and moving intelligence, operational information, and orders where needed in the shortest possible time.”¹⁷ A JP is not designed to dictate operational methodology to individual services and it lacks any emphasis on non-DoD organizations. Unfortunately, so does the U.S. Army’s doctrinal manual on counterinsurgency (COIN), FM 3-24. While the FM has a lot of data points on the conduct of COIN operations, it only touches on intelligence fusion for a couple paragraphs. This short section covers in broad terms what “intelligence cells and working groups” should contain in terms of membership and what meetings they should have. FM 3-24 notes, “COIN occurs in a joint, interagency, and multinational environment at all echelons. Commanders and staffs must coordinate intelligence collection and analysis with foreign militaries, foreign and U.S. intelligence services, and other organizations.”¹⁸ “How” fusion is supposed to occur and best practices are not mentioned in FM 3-24.

Some of the most recent works on fusion cells are from the National Security Analysis Department at Johns Hopkins University and the U.S. Joint Forces Command (JFCOM). The Johns Hopkins paper presents useful analysis and ideas from participants throughout the intelligence and defense communities during a recently held Interagency

¹⁷ *Joint Publication 2-0*, xviii.

¹⁸ Department of the Army, *Field Manual 3-24 Counterinsurgency* (Washington, DC: Department of the Army, 2006), 3-1.

Teaming Workshop.¹⁹ The JFCOM paper, *Application of Tactical Fusion Cell Principles at Higher Echelons*, details observations made by JFCOM personnel who deployed to Iraq to observe DoD-centric fusion cells and collected useful lessons learned from their operations.²⁰ Some of the lessons, such as the importance of focusing the fusion cells on a singular mission and empowering personnel within fusion cells to solve problems, are quite applicable to this thesis.

Another source of literature, which did not directly impact this thesis, but may be of use to future research on fusion cells, comes in the form of introspective analysis, such as the DHS Inspector General's 2008 report titled "DHS' Role in State and Local Fusion Centers Is Evolving," or in the form of external examination and commentary, such as the material offered from The Institute for Intergovernmental Research, the Markle Foundation, and the various fusion center conferences held each year.²¹ The Manhattan Institute Center for Policing Terrorism's *Policing Terrorism Report* contains some very useful vignettes and first hand descriptions of lessons learned, such as the September 2007 edition, which discusses some best practices for State and Local Fusion Centers.²² Although limited to the state and local level, these materials are a developing source of theory and practice for all fusion cells.

F. CONCLUSION

Available literature reviewed for this thesis, and discussed in this chapter, focuses on a variety of important topics and concerns for successful operation of fusion cells.

¹⁹ WB Crownover, et al., "Interagency Teaming Workshop: Final Report of Analysis and Findings," National Security Analysis Department, Johns Hopkins University Applied Physics Laboratory. Report published at the FOUO-level and can be found on SIPRNET at <http://army.daiis.mi.army.mil/org/aawo/awg/default.aspx>.

²⁰ As cited in W. Hartman, "Exploitation Tactics: A Doctrine for the 21st Century" (Monograph, School of Advanced Military Studies, United States Army Command and General Staff College, 2008), 24.

²¹ U.S. Department of Homeland Security Office of Inspector General, "DHS' Role in State and Local Fusion Centers Is Evolving," http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_09-12_Dec08.pdf (accessed April 24, 2009).

²² John Rollins and Timothy Connors, "State Fusion Center Processes and Procedures: Best Practices and Recommendations," *Policing Terrorism Report* no. 2 (2007), http://www.manhattan-institute.org/html/ptr_02.htm (accessed May 15, 2009).

Some key data was pulled from this literature and informed and helped develop our variables, such as the importance of flattened organizations with solid leadership, empowering personnel, cross-communication (transparency), and the value of flexible, adhoc elements task organized to accomplish their mission. However, most of the literature focused on items which were not directly applicable to this thesis, such as information technology, legal considerations, and internal DoD or DoJ planning considerations. While all those items are important, they miss some very basic elements that enable fusion cells to be effective. In essence, most of the literature reviewed presents concepts that are necessary conditions rather than sufficient. The next chapter will examine elaborate on some of the more pertinent literature while exploring historical attempts to fix interagency effectiveness.

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III. THE SEARCH FOR INTERAGENCY EFFECTIVENESS

A. DEFINING EFFECTIVENESS

Fusion cells (FC), as previously defined, involve co-locating personnel from multiple government agencies under a common chain of command in order to reach objectives in a manner that is more effective than unilateral efforts by any single agency. Fusion cells are a micro and, at their best, highly effective example of United States government (USG) interagency coordination. They differ from the macro in that, in any given fusion cell, a large bureaucracy (e.g., Federal Bureau of Investigation) with thousands of employees might be represented by a single individual. However, that individual will often bring with him/her the values, norms, and cultural practices of the parent agency, making the manner in which fusion cell members interact symbolic of the large-scale interactions of their parent agencies. Therefore, our findings on FC effectiveness will be preceded by a discussion of interagency effectiveness, to include recent history on interagency reform recommendations and a review of the decades-long discussion calling for improvements to the interagency coordination process. A consistent failure to heed these recommendations was identified in post 9/11 U.S. policy reviews as a contributing factor to some of the major intelligence and foreign policy difficulties in recent U.S. history.

Interagency effectiveness is a nebulous term due, in large part, to consistent disregard for seeking a true definition of the concept within the USG. It is a subject that lends itself to pontification, but seldom to the actual setting of benchmarks that would define and codify success (e.g., production of actionable intelligence, crimes/attacks thwarted, criminals/terrorists detained). Such codification would allow interagency effectiveness or ineffectiveness to be empirically measured over time, but the vagueness of current terminology makes such empirics difficult to find. As an example, in a White House memorandum released March 19, 2009, National Security Adviser GEN (Ret.) James L. Jones states that:

At its core, the purpose of the interagency process is to advance the President’s policy priorities and, more generally, to serve the national interest by ensuring that all agencies and perspectives that can contribute to achieving these priorities participate in making and implementing policy.²³

In other words, the purpose of interagency collaboration is to ensure interagency collaboration. Such a tautological definition is representative of the difficulty encountered in any efforts to quantify the overall effectiveness of interagency coordination, as it is currently a concept without deliverables. Because of the gap between theory and practical application, little real doctrinal work on the evolution of interagency effectiveness over time has emerged. Therefore, as the authors did with the term ‘fusion cell,’ we will also offer a definition of interagency effectiveness. Interagency effectiveness will henceforth refer to the ability of two or more USG agencies to coordinate in a rapid and routine manner on problems that are broader than the mission set of any one agency, so that their combined abilities allow for the identification, deconstruction, and management of formerly inaccessible problems.

B. HISTORY OF INTERAGENCY REFORM

Identifying the need for effective coordination between national agencies is neither a new concept nor a product of the post-9/11 conflict. As noted in the Project on National Security Reform’s (PNSR) 2008 study *Forging a New Shield (FNS)*, the issue of national security reform, often directed at improving coordination between various elements, has been in evolution since 1947’s National Security Act. This act created the organizations that are the cornerstones of today’s foreign policy decision making apparatus, to include the Department of Defense, the National Security Council, and the modern intelligence community.²⁴ As the authors of *FNS* suggest, “it might seem as if the national security system is constantly evolving. Over the past six decades, there have been hundreds of major and minor reforms as well as numerous commission reports and

²³ J.L. Jones, “The 21st Century Interagency Process.”, White House memorandum, March 19, 2009.

²⁴ J.J. Carafano, “Herding cats: understanding why government agencies don’t cooperate and how to fix the problem.” (Heritage Lecture 955 for the Heritage Foundation, Washington, D.C., June 15, 2006)

studies.”²⁵ Additionally, the National Security Act of 1947 has been under regular review and modification since its inception. Beginning with the Hoover Commission of 1949, which strengthened the U.S. military’s role in national decision making, each administration from Truman to Carter attempted to improve the structure that drives national security coordination and decision making.²⁶ Late in the Cold War, President Reagan released National Security Decision Directive (NSDD) 276 with the intent of improving the efficiency of interagency coordination at the most senior levels of government, which had been advanced in NSDD-2 and NSDD-266 (also under Reagan), but required additional refining:

Under NSDD-266, the National Security advisor was ordered to review the complex NSC substructures established by NSDD-2 [released in 1982]. Based on this review, Reagan issued NSDD-276 months later, which superseded all applicable directives and transformed the NSC system from a highly complex and largely unmanageable body into a simpler and streamlined organization.²⁷

Under NSDD-2 President Reagan had established “interagency groups” to cross-level information, but these elements were inefficient. Reagan offered, in NSDD-276, a metric for grading effective interagency coordination when he stated that interagency groups, “achieve their goal when they provide thorough and clear analyses of all policy choices, coordinate policy implementation, and review policy in light of experience.”²⁸ NSDD-276 represents one of the first efforts to quantify what successful interagency coordination would look like, but it still did not provide a basis of irrefutable empirics. The end product of NSDD-276 was policy advice, not action.

Decades after Reagan’s reform efforts, interagency coordination still remained a significant hurdle to USG efficiency. The now prophetic findings of the February 2001

²⁵ Project on National Security Reform, *Forging a New Shield*, (Project on National Security Reform: Arlington, VA, December 2008), accessed from <http://pnsr.org/data/files/pnsr%20forging%20a%20new%20shield.pdf> on 14 January 2009, 6.

²⁶ Ibid., 7–8.

²⁷ C.M. Brown, *The national security council: a legal history of the President’s most powerful advisors*. (Washington, D.C.: Center for the Study of the Presidency, 2008), 54.

²⁸ R. Reagan. *National Security Decision Directive 276: National Security Council Interagency Process*. (Washington, D.C.: National Archives, 1982).

Hart-Rudman Commission, *Roadmap for National Security: Imperative for Change*, cited the need for establishing interagency coordination groups as part of each of its five major recommendations for reform. While the areas identified as needing reform varied from protection of the American homeland to shortcomings of the USG personnel system, each area notes that a lack of interagency coordination has led to decades of stovepipes and inefficiencies. The issue lies at the core of the commission’s most famous prediction, as it was released just seven-months before Al Qaeda’s 9/11 attacks:

A direct attack against American citizens on American soil is likely over the next quarter century. The risk is not only death and destruction but also a demoralization that could undermine U.S. global leadership. In the face of this threat, our nation has no coherent or integrated governmental structures.²⁹

The commission goes on to describe such “integrated governmental structures” as interagency teams established on a temporary or permanent basis to address inefficiencies in government coordination, policy creation, and information sharing.

Most notable amongst these areas is the commission’s identification of shortcomings in USG ability to manage future conflict. They noted that the regional view of the military’s geographic Commanders in Charge (CINCs, now Geographic Combatant Commanders—GCCs) was not in line with the USG diplomatic view of the world, where Ambassadors have a single country view. The Hart-Rudman Commission also highlighted that the existing USG structure impedes the Department of State (DOS) from efficiently implementing regional policies or monitoring regional threats and makes the viewpoints of DOS and DoD incongruent, as DoD members maintained a regional view through the CINC system. Simply put, “a gap exists between the CINC, who operates on a regional basis, and the Ambassador, who is responsible for activities within one country.”³⁰ In today’s world, we see examples of this in the intelligence community’s efforts to monitor the regional goals of trans-national terrorists who, while

²⁹ Gary Hart, et. al. *Road Map for National Security: Imperative for Change*. (Washington, D.C.: The United States Commission on National Security/21st Century, 2008), viii.

³⁰ Ibid., 62.

living in a given country may present no overt threat and are therefore not seen as a destabilizing force by DOS personnel in that specific nation. This disaggregate relationship creates the very space wherein a non-state terrorist actor is able to work. Having identified this issue prior to the 9/11 attacks, Hart-Rudman called for the National Security Council (NSC) to “establish NSC interagency working groups for each major region, chaired by the respective regional Under Secretary of State, to develop regional strategies and coordinated government-wide plans for their implementation.”³¹

Following the 9/11 attacks and the release of the *9/11 Commission Report*, Congress and the Bush administration adopted a top-down reform approach. With the “Intelligence Community Leadership Act of 2002,” Congress created the Director of National Intelligence (DNI) position in order to establish an overarching manager of all intelligence organizations.³² Traditionally, the Director of Central Intelligence (DCI) had served as senior advisor to the President on intelligence matters while also running the Central Intelligence Agency. Following the creation of the DNI, President Bush penned Executive Order 13355, in which he established that the DCI was subordinate to the newly created DNI.³³ These top-down reform measures hoped to synchronize intelligence efforts by clarifying the hierarchy. But no one person or staff can possibly manage and coordinate the efforts of the entire intelligence community, regardless of who reports to whom on a line-diagram. The failures leading to 9/11 led to the creation of even more hierarchy and bureaucracy, but did not address interagency coordination at the ground-level.

Such findings are not surprising when one considers the complexity of managing national security and the relationship between the organizational structures currently tasked with that job. In 1980, Henry Mintzberg wrote, “Organizational Design: Fashion or Fit?” for *Harvard Business Review*. It is a cornerstone work on modern organizational

³¹ Hart, et. al. *Road Map for National Security*, 62.

³² U.S. Congress, *Intelligence Community Leadership Act of 2002*, accessed from <http://thomas.loc.gov/cgi-bin/query/z?c107:S.2645.IS> on November 13, 2009.

³³ G.W. Bush, “Executive order 13355 of August 27, 2004: strengthened management of the intelligence community.” *Federal Register* 169 (2004): 53593-97.

design theory, and the fundamentals presented by Mintzberg hold true today. Mintzberg presents five type of bureaucratic structures (simple, professional, machine, divisionalized, and ad-hoc), and today's USG structure clearly falls in the divisionalized form.³⁴ A divisionalized organization is, “a set of rather independent entities joined together by a loose administrative overlay.”³⁵ This is an apt descriptor for the relationship between the Executive-NSC (administrative overlay) and the various national organizations involved in national security (independent entities). Mintzberg’s focus was on the business world where there were measurable outputs (products, profits) – success of the divisionalized structure could be regulated by standardization of output. If a division were not meeting the standard (producing widgets accurately or fast enough), then it would be overhauled. However, as is the central core of measuring interagency effectiveness, measuring the output of national security organizations (including DOJ, DoD, CIA) is exceptionally difficult. The problem is that these national organizations are happy to exist within the lanes of their ‘division,’ from which perspective any given organization never has a sufficient view to truly see the enemy network, and therefore can never be held truly responsible for missing the activities of that network.

Horizontal connectivity is required to coordinate Mintzberg’s divisions when there is not a visible, tangible output. Robert Polk, member of the *PNSR* and advisor to its founder, Jim Locher, points to this fact in his article, “Interagency Reform: An Idea Whose Time has come.”³⁶ Polk refers to Mintzberg’s divisions as stovepipes, noting that today’s environment demands horizontal communication between elements:

The private sector learned years ago how to organize and manage its resources in order to stay competitive. It learned that problems often present themselves in ways that demand a team approach rather than one

³⁴ Henry Mintzberg, “Organizational Design: Fashion or Fit,” *Harvard Business Review*, January 1, 1981, 4.

³⁵ Ibid., 9.

³⁶ R.B. Polk, “Interagency reform: an idea whose time has come.” in *The Interagency and counterinsurgency warfare: stability, security, transition, and reconstruction roles*, eds. J.R. Cerami and J.W. Boggs, accessed from www.strategicstudiesinstitute.army.mil on November 13, 2009, 321.

based on stovepiped, or independent, subordinate elements. Yet, instead of doing away with the stovepipes, e.g., the offices, altogether, they simply added horizontal teams to their organization...This new horizontal team concept was so-named because it provided a place for members from across the other stovepipes to come together horizontally and participate in solving a common problem together.³⁷

The DoD, Polk argues, discovered a method for overcoming inter-service stovepipes when forces deploy forward—the Geographic Combatant Commander (GCC). These theater commanders create joint staffs to establish a cross-service approach to regional problem-sets. Though not always perfect, these efforts have proven effective at coordinating multi-service military efforts in theater between elements that had not previously worked together. “The time is now at hand,” Polk concludes, “for the U.S. government to consider a more wholesale adaptation of the horizontal team approach to its national security system.”³⁸

Seven months prior to the September 2001 attacks, the Hart-Rudman commission had accurately identified the inability of the USG to efficiently address the actions of a non-state actor such as Al Qaeda. The terrorist group’s non-allegiance to any diplomatically recognized system placed them outside of the established structure of the USG. In this vast space, the group was able to live, plan, and coordinate their activities while remaining essentially impervious to USG efforts. Hart-Rudman had correctly and prophetically identified that the USG had created a wide array of powerful organizations, but lacked the ability to fuse individual efforts, thereby making the nation highly vulnerable to attacks “at the seams.”

C. LESSONS FROM THE COLD WAR

It is understandable that the USG might feel little need to thoroughly address interagency reform in the 1990s. At that point, the United States had just prevailed against its largest strategic threat between World War II and the 1990s—the Soviet Union – albeit while suffering through an unending draw (Korea), a significant loss (Vietnam),

³⁷ Polk, “Interagency reform: an idea whose time has come,” 333.

³⁸ Ibid., 334.

and several embarrassments (e.g., Beirut, Grenada) along the way. The Cold War dominated the strategic thought process of eight administrations, from Harry Truman to Ronald Reagan. From Winston Churchill’s 1946 “Iron Curtain” speech to Ronald Reagan’s 1987 “Tear Down this Wall” speech, the U.S. faced a near-half century struggle during which interagency reforms were never thoroughly addressed; yet the U.S. was still victorious. How, one might ask, was such a victory possible without interagency effectiveness; or inversely, why is interagency effectiveness a modern-day priority if the Cold War could be won without it? One must also consider the view first suggested by George Kennan in his 1946 “Long Telegram” that, if thoroughly contained (militarily, politically, economically), the Soviet Union was destined for failure. Kennan saw communism as, “a malignant parasite which feeds only on diseased tissue,” and believed it would implode if prevented from expanding.³⁹ From this perspective, did the U.S. *system* win the Cold War, or was the Soviet Union simply effectively contained, thereby self-destructing? We must not draw the wrong lessons from the Cold War and overestimate the effectiveness of the structures established by the United States during that conflict, especially given today’s radically different national security environment.

The differences between the Cold War and the current global situation are not difficult to identify. First, the Cold War was a state-on-state conflict wherein the United States and Soviet Union mirrored one another’s growth and capabilities in a classic game of strategic maneuvering. The CIA faced the KGB; the DoD faced the Soviet military; nuclear arsenals were developed in kind; troops, tanks and aircraft were increased and positioned based on enemy posturing. The Cold War was a game of strategy where two major powers utilized the resources of their states and numerous proxies (e.g., North Vietnam, Afghanistan’s *Mujahedeen*) to outmaneuver the enemy. As different as the ideologies were between communism and democracy, the conflict was approached in a very similar manner by both regimes – build up forces and assets, establish allies, and gain strategic positioning. As a result, the U.S. and Soviet systems developed similar

³⁹ G. Kennan, “The Long Telegram.” Section 5, (1946) accessed from http://en.wikisource.org/wiki/The_Long_Telegram#Part_5:_Practical_deductions_from_standpoint_of_US_policy on October 23, 2009.

seams between their major organizations; however, since each side chose to maintain a symmetric approach to the problem, the United States was able to avoid true interagency reform and still prevail.

One notable example demonstrating the advantage of having a relatively stable strategic game between the U.S. and Soviet Union is seen in the Cuban Missile Crisis. In his seminal work on the topic, *Essence of Decision*, Graham Allison offers a thorough analysis of many U.S. missteps throughout the thirteen days of October, 1962 when the crisis was the sole focus of the Kennedy administration. The crisis, indeed the entire Cold War, was framed in the concept of the Rational Actor Model (RAM), which Allison defines as, “the attempt to explain international events by recounting the aims and calculations of nations or governments.”⁴⁰ Believing that your adversary is rational in his decision making, and assuming that he believes the same about you, allows for balanced signaling wherein your actions send messages and your adversary’s actions can be interpreted. This symmetry allows for missteps, such as the accidental encroachment of a U.S. U-2 reconnaissance aircraft into Soviet airspace during the peak of the crisis, to be analyzed by the enemy with the assumption that a rational opponent (the U.S.) would not *want* to start a nuclear war.⁴¹ In such an environment, where two goliaths mirror one another in capability and are assumed rational, there is time and space for each nation’s major organizations to analyze their opponent’s actions and react appropriately. Even during the missteps of the Cuban Missile Crisis, tragedy was ultimately (though just barely) avoided despite ineffective interagency coordination. While the Executive Committee of the National Security Council (ExCom) was an ad-hoc effort to pull together the appropriate advisors for President Kennedy, its efforts were based on personality and relationships, not established doctrine.⁴² The Cuban Missile Crisis, and indeed the entire Cold War, was a balanced game of strategy where each player was assumed to be rational and therefore not *trying* to escalate to the level of nuclear war.

⁴⁰ G.T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*. (Ottawa: Little, Brown, and Company, 1971), 10.

⁴¹ Ibid., 141.

⁴² Ibid., 42.

D. TODAY'S STRUGGLE: A DIFFERENT GAME

Today's enemy is not playing a symmetric game of strategy, and certainly cannot be considered rational under traditional theory. Escalation on a global scale (not de-escalation), as argued by Fawaz Gerges, has been the true goal of Al Qaeda and its associated movements since the mid-1990s. Escalation with the West is seen as tool to create a common enemy that would unite the many varied jihadist groups that evolved in the post-colonial Middle East, most of which were effectively suppressed by Western-backed regimes:

Taking jihad global would put an end to the internal war that roiled the jihadist movement after it was defeated by local Muslim regimes. ‘The solution’ was to drag the United States into a total confrontation with the ummah and wake Muslims from their political slumber.⁴³

An important goal of today's adversary is to constantly increase the size and power of their network (*high profile operations + responses from Western media / military / governments = additional resources and recruits*) in order to create a global network that is not constrained by the bureaucratic relationships that exist in the United States and other nation state governments. These Cold War organizations, when not themselves networked, leave large seams in the national security apparatus of the United States that are previous to attack from an enemy with resources, personnel, and financing, but without similar constraints. As nation states, the United States and her allies have a world view driven by these bureaucratic structures despite the fact that the enemy situation has evolved beyond these channelized capabilities. In *Worst Enemy* John Arquilla (a founding theorist of netwarfare) suggests that the USG's insistence on seeing the world through established bureaucratic structures has created an institutional blindness to the fact that our enemy is operating as a coordinated network:

⁴³ F. Gerges, *The Far Enemy: Why Jihad Went Global*. (New York, NY: Cambridge University Press, 2005) 160.

We have continued to pursue our well-worn paths despite the fact that our experiences of the past several years suggest the urgent need to think in terms of netwar, to recognize that the hallowed principles of war have been affected by the emergence of the network. Our reluctance to make this intellectual leap imperils us the most.⁴⁴

Today's terror networks cross both organizational and nation-state boundaries, therefore the requirement for effective interagency cooperation cannot be left unaddressed.

In today's conflict, the most effective counter-terrorism fusion cells brings together the right people from the right organizations, creating a friendly network that is able to close the bureaucratic-seams that have been effectively exploited by the enemy network. In his earlier work with fellow netwar theorist, David Ronfeldt, Arquilla made the now oft-quoted comment that, "it takes networks to fight networks."⁴⁵ Creation of these intelligence-networks, "will require very effective interagency operations, which by their very nature involve networked structures."⁴⁶ The counter-terrorism fusion cell is one of the few organizations in today's arsenal that has answered this call; therefore, studying their effectiveness offers key insights into macro-level interagency reform. The fusion cell unit of analysis is the individual member, but these individuals represent an agency of the USG and bring with them the cultural norms of that agency. Thus, the organizational hurdles faced by a given fusion cell provide a view of the issues that larger interagency reform efforts will encounter.

Given the history of senior level analysis identifying the shortcomings in interagency coordination, it is notable that *Forging a New Shield* highlights many of the same problems (published seven years into the current conflict). The study's premise is that the United States has failed to enact sufficient reforms since the National Security Act of 1947, and is therefore trying to manage a modern conflict with a system designed

⁴⁴ J. Arquilla, *Worst Enemy: The Reluctant Transformation of the American Military*. (Chicago: Ivan R. Dee Publishing, 2008) 166.

⁴⁵ J. Arquilla and D. Ronfeldt, *The advent of netwar*. (Santa Monica: Rand Corporation Publishing, 1996), 82.

⁴⁶ Ibid., 82.

to address the post-World War II paradigm, noting that the “national security system faces twenty-first century challenges but it is far from being a twenty-first century organization.”⁴⁷ The authors note that:

the U.S. national security system is still organized to win the last challenge, not the ones that come increasingly before us. We have not kept up with the character and scope of change in the world despite the tectonic shift occasioned by the end of the Cold War and the shock of the 911 attacks. We have responded incrementally, not systematically; we have responded with haste driven by political imperatives, not with patience and perspicacity.⁴⁸

The identification of the problem is not the main issue as the criticality of effective interagency coordination has been consistently identified for over 50 years; instead, the major flaw lies in the inability of the entrenched bureaucratic system to modify its structure and relationships in order to meet the challenges of the current threat environment.

The seams between government agencies, noted by Hart-Rudman in 2001, reappear as a theme in 2008. Bureaucratic parochialism leads the members of any single organization to focus first and foremost on the norms and practices of their own institution. Without doctrinal requirements for coordination between organizations there is no incentive for members to attempt to bridge the gap - even when such coordination is obviously needed in solving a given problem. As noted in the Hart-Rudman study:

Interagency staffing is therefore difficult because departments and agencies hoard their people. They hoard them because there are no incentives in the talent management system for individuals to leave their agencies, or for their departments or agencies to share them.⁴⁹

The human resource and budgetary incentive structure in USG bureaucracy creates seams between USG capabilities, and these seams create blind spots in the USG’s ability to

⁴⁷Project on National Security Reform, *Forging a New Shield*, (Project on National Security Reform: Arlington, VA, December 2008), accessed from <http://pnsr.org/data/files/pnsr%20forging%20a%20new%20shield.pdf> on 14 January 2009. 497.

⁴⁸Ibid., vi.

⁴⁹G. Hart et al., (2001). *Road map for national security: imperative for change*. (Washington, D.C.: The United States Commission on National Security/21st Century, 2001), 270.

assess and address asymmetric problems that span the focus of multiple organizations. The authors note that, “as a consequence, mission-essential capabilities that fall outside the core mandates of our departments and agencies are virtually never planned or trained for - a veritable formula for being taken unawares and unprepared.”⁵⁰ When complex problem sets arise requiring a fusion of resources and personnel from multiple government agencies the current model creates, at best, an ad hoc and temporary solution.

The solutions proposed in *Forging a New Shield*, as with previous studies, are all grounded in establishing a codified system of interagency coordination. At the national level, this study calls for the creation of two tiers of interagency elements. The first, interagency teams, would be “composed of full-time personnel, properly resourced and of flexible duration, and be able to implement a whole-of-government approach to those issues beyond the coping capacities of the existing system.”⁵¹ These teams would knit together the seams that exist between agencies, and create an incentive structure for effective interagency coordination by establishing a career outlet for collaborative efforts. On an as-needed basis, the study recommends creating “Interagency Task Forces” designed to “handle crises that exceed the capacities of both existing departmental capabilities and new Interagency Teams.”⁵² Dynamic modern problems, such as global terrorist elements or nation-building efforts in Iraq, would be well suited for such a Task Force structure. This study suggests that both short- and long-term solutions to these dynamic problems do not lie in the reform of any given agency, but in creating a system whereby the capabilities of multiple agencies can be effectively fused for rapid and effective decision making.

From President Truman to the current environment, the answers to creating a more effective interagency environment have been of a similar theme. The cornerstone of such efforts is the need for interagency groups whose charter is to fuse the talent,

⁵⁰ Hart, et. al. *Road Map for National Security*, ix.

⁵¹ Project on National Security Reform, *Forging a New Shield*, (Project on National Security Reform: Arlington, VA, December 2008), accessed from <http://pnsr.org/data/files/pnsr%20forging%20a%20new%20shield.pdf> on 14 January 2009. xii.

⁵² Ibid., xiii.

resources, and unique capabilities of multiple organizations. The studies discussed thus far have focused on national-level reform, in large part because (as previously noted) there has been little attention given to micro-level efforts focused on interagency collaboration. This study will now do just that, and discuss the findings of our research on interagency fusion cells. Significant lessons for macro-level improvements in interagency effectiveness may be derived from these relatively small elements that are finding creative ways to cross the interagency hurdles.

IV. SURVEY METHODOLOGY

A. INTRODUCTION

There is no standard doctrine or template for intelligence fusion cells. For example, the 72 state and local fusion cells recognized by the Department of Homeland Security (DHS) are each designed differently, responding to the unique requirements particular to the creation of that cell. Department of Defense (DoD) fusion cells and FBI JTTFs are no different; they are task-organized to respond to a particular problem set. There is one basic principle that fusion cells do follow: members from different agencies (law enforcement or government) come together to combine their expertise.

This variance in fusion cells creates a measurement problem concerning how one can measure fusion cell effectiveness given the range of fusion cell models, mission, location, and membership. The authors decided to create and distribute a survey to individuals who may have served (or may be currently serving) on fusion cells. This chapter will further discuss our choice of measurement techniques, survey methodology and challenges, ways we overcame those challenges, and future research suggestions.

B. SURVEY DESIGN AND DISTRIBUTION

The wide variety of fusion cells challenged the authors with how could we operationalize our hypothesis. With 72 State and Local Fusion Centers,⁵³ and 106 FBI JTTFs or JTTF annexes in the US,⁵⁴ and approximately 20 DoD fusion cells OCONUS, we determined that visiting a majority of them was not feasible given our research resources and time. Instead, in order to gather information across the various types of fusion cells and the varied membership in those cells, we utilized an online unclassified survey. The survey is comprised of 33 questions with Likert scale responses, nine

⁵³ Department of Homeland Security, “State and Local Fusion Centers,” DHS, http://www.dhs.gov/files/programs/gc_1156877184684.shtml.

⁵⁴ Federal Bureau of Investigation, “PROTECTING AMERICA AGAINST TERRORIST ATTACK A Closer Look at Our Joint Terrorism Task Forces,” FBI, http://www.fbi.gov/page2/may09/jtfs_052809.html (accessed October 10, 2009).

background information questions, and five open-ended comment questions.⁵⁵ Five to six questions are grouped together per each independent variable: access to decision makers, membership, level of empowerment, decision making process / information flow, and leadership. The responses to these questions provided the raw data for analysis in Chapter V.

The survey was sent out to approximately 4,000 individuals who subscribe to the Military Intelligence Listserv on the Army Knowledge Online (AKO) network, the directors of the 72 state and local fusion cells in the United States, and approximately 15 individuals whom the authors worked with on prior assignments with fusion cell experience. From this sample size, over 200 individuals initiated taking the survey and 110 individuals completed it. 69% of those completing the survey answered that they were part of DoD, 4% from DHS, 1% from DOJ, 14% from state or local law enforcement, and 12% from other governmental agencies (e.g., CIA, NSA). Additionally, the authors conducted face-to-face or phone interviews with 20 individuals who were either former members of fusion cells, fusion cell leaders, or consumers of fusion cell products.

C. SURVEY CHALLENGES

One major hurdle the authors had to overcome was how to get our survey out to those individuals who have the requisite experience to be of value to our research. To ensure our sample size was large enough to lend validity to the data collected, we elected to cast a wide net in the distribution of our survey. As mentioned, we utilized the AKO Listserv to send the majority of our surveys out and reach the widest audience of people who possibly had fusion cell experience. The Listserv sends emails, sometimes over a dozen per day, with pertinent content to all members and our survey went out as one of those emails.

⁵⁵ The Likert scale assigns a number value (1-6) on responses that range from strongly disagree to strongly agree. See http://en.wikipedia.org/wiki/Likert_scale for more.

Another challenge in designing the survey to collect needed data was the variation of fusion cells. The authors originally planned on collecting data on only DoD fusion cells but added the CONUS-based, law enforcement focused fusion centers since they are critical in the evolution of fusion cells. The survey thus had to include questions which could draw out relevant data from survey participants - irrespective of the organization they work for or what kind of fusion cell they worked in.

Perhaps the most challenging aspect of collecting data for this thesis was the lack of any common definition as to how each fusion cell measures (defines) its own effectiveness. One U.S. Army officer interviewed for this thesis with first-hand experience in fusion cell operations stated that effectiveness, while not tracked habitually and not codified as the definite yard stick, was measured by comparing the percentage of targetable intelligence provided by the fusion cell to an operational element with the percentage of that intelligence which led to successful operations.⁵⁶ This rough measure was often cited during the authors' research and interviews as being used by deployed DoD fusion cells. The operational tempo (optempo) of deployed DoD elements combined with often near immediate and tangible results from combat operations allows deployed DoD fusion cells supporting combat operations in Afghanistan and Iraq to utilize this measure of effectiveness.

By comparison, fusion cells located in the U.S. frequently have a much slower operational tempo and less immediacy in the targets they work day after day. One State and Local fusion center director interviewed explained that, since the fusion center he worked in was relatively new, success was measured by simply getting all the right organizations in one room talking and working together.⁵⁷ While lacking the empirical measure often utilized by DoD, this measure does address the goal of fusion cells of bringing organizations together in one place to work towards a common mission when they would not have been working as closely together were there not a fusion cell.

⁵⁶ Anonymous DoD Intelligence Officer, interview with authors, September 2009.

⁵⁷ Anonymous State Fusion Center Director, interview with authors, October 2009.

From a social science perspective, this proved particularly limiting when trying to measure our independent variables against the dependent variable of fusion cell effectiveness. Simply put, because no fusion cell uses the same measure of how effective it is, the authors could not empirically measure the dependent variable of fusion cell effectiveness across the various types of fusion cells in order to compare which types are most effective and why.

D. CHALLENGES PROVIDE OPPORTUNITIES

The methods used to distribute our survey did indeed succeed in getting the survey out to a wide audience. However, only 2.5% of the surveys sent out were completed online. The low percentage of responses is attributed to the small percentage of personnel on the Listserv who actually had fusion cell experience and were willing to take a survey (no matter how well designed) elaborating on their experiences. The fact that those responding had to actively choose to participate in the survey by opening the email, going to the survey link, and taking the time to complete the survey, gives the authors a high degree of confidence that the survey responses contain data from personnel with real fusion cell experiences.

The lack of common definitions on how to measure fusion cell success combined with the great variance of fusion cell structure, mission, and membership led the authors to create variables that capture measures of effectiveness which are applicable across the spectrum of variance in fusion cells. The data submitted by survey participants and the interviews conducted by the authors provides an excellent measure of what makes fusion cells effective from both the perspective of fusion cell members and consumers of fusion cell data. While hard numbers, such as a comparative ratio of data provided by a fusion cell to targets successfully prosecuted from that data, can rarely be applied to measure the success of fusion cells, the data collected from our surveys and interviews illustrates those conditions, which are individually necessary and collectively sufficient to equal a successful fusion cell.

As highlighted earlier in this chapter, the majority of the surveys were received from DoD personnel. The fact that 69% of our completed surveys come from one organization cautioned the authors to examine our data closely for any institutional bias which may result from the majority of the surveys coming from DoD personnel. However, with slightly under 1/3 of our returned surveys coming from outside DoD, we are confident we have a sufficient amount of data to compare with the DoD surveys and control for bias.

E. FUTURE RESEARCH RECOMMENDATIONS

This thesis seeks to understand what makes fusion cells effective. More research needs to be done on the more technical aspects of how to improve fusion cells. What advances and innovations in computers and network technology can be leveraged to improve fusion cell effectiveness? What tools are available so fusion cell members can quickly and virtually interact with their counterparts around the world?

More research can be done on what training fusion cell personnel and leaders need to be more effective. One promising development is as of winter 2009/10 the Naval Postgraduate School is creating a course to help train fusion cell directors. A major item which needs to researched and trained is how to improve information sharing and transparency amongst fusion cell members.

Despite the challenges of administering a survey virtually to many different locations and organizations, the responses received contain sufficient data to support a robust analysis of those factors that make fusion cells effective. The interviews conducted provided excellent amplifying data and much anecdotal evidence which is sometimes lost when relying purely on hard numbers from survey data. In Chapters V and VI, the authors will examine exactly what the data from the surveys and interviews means and what makes fusion cells effective.

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V. RESEARCH RESULTS

A. INTRODUCTION

Fusion Cell (FC) veterans, with an average of 20 years of government experience, indicated that the most important variables bearing on FC effectiveness were access to decision makers and decision-making process/information flow. We determined this by analyzing 115 survey responses and conducting 20 interviews with FC veterans. We sought to determine the nature of the relationship between effectiveness and our independent variables: access to decision makers, cell membership, level of individual empowerment, decision making process/information flow, and leadership influence effectiveness. The results are presented in six sections: demographic background, descriptive statistics, regression analysis, interview responses, measures of effectiveness, and summary.

We examined how each of the five variables influences effectiveness via descriptive statistics and regression analysis. Our survey results and research revealed that currently there is no standard, commonly accepted definition for FC effectiveness (our dependent variable). We then analyzed the survey and chose four possible proxy dependent variables that had the potential to best represent effectiveness. Three of these proxy questions came from our independent variable “access to decision makers” and the fourth was not a component of any of our independent variables. This analysis concluded that the best fit was achieved by using the fourth proxy question, “This FC is effective.” We arrived at this conclusion via regression analysis and by determining that using questions from an existing independent variable damaged the integrity of the overall model.⁵⁸

Both descriptive statistics and regression analysis brought out important findings on how to improve the effectiveness of FCs. For the descriptive statistical analysis below, we analyzed the overall results by each independent variable. This section also

⁵⁸ See Appendix A, pages 2–3 and the Regression Analysis section on page 47.

incorporates the results of item-level frequency analyses. The regression analysis examines both the overall model and each of the subset models (DoD, State and Local, and Other Governmental Agencies).

Regression analysis discusses both the statistical and substantive significance of our results. As mentioned above, regression analysis revealed that our hypothesis has explanatory power with respect to the overall model, but that there are significant statistical variations within our subset models (findings with $p>0.10$; relaxed from 0.05 due to small sample size). In our analysis, we focus on the interpretation of statistically significant factors ($p<0.10$) and try to understand why some factors are less robust ($p>0.10$). Our substantive interpretation of the regression results is supplemented by our professional experience, in-depth interviews, and descriptive statistics. In essence, in those cases where our subset models did not conform to the overall model and do not have statistical relevance, we present possible explanations as to why this is so and encourage further study in these areas.

Interviews confirmed the overall findings and highlighted internal FC functional issues (training, politics) and larger structural impediments concerning parent agency support to FCs. The survey and interview research also revealed a significant structural problem with how FC's measure effectiveness. Currently, almost every FC has their own unique measures of effectiveness and their own methodology on how to determine if they have been effective.

B. DEMOGRAPHIC BACKGROUND

Demographic responses indicate respondents have exceptional experience levels, both overall and on FCs. Survey participants were more likely from the Department of Defense than any other agency (60/40% split), had spent an average of 25 months on an FC, and had over 20 years of government experience.⁵⁹ Survey participants most likely were not currently serving on an FC, and when they were, it was just as likely to be

⁵⁹ Organization: 71 DoD, 5 DHS, 2 DoJ, 12 OGA, and 21 State and Local. Time on FC: average 25 months. Overall government service: average 20.6. Position: Leadership 68, Analyst 62, Liaison: 32.

located OCONUS as CONUS. Survey responses determined that FC's averaged 29 individuals in size and the majority supported six or more separate agencies.⁶⁰

C. STATISTICAL ANALYSIS

As discussed in Chapter IV, the authors developed the survey questions from their experiences on and working with FCs as well as a review of the relevant literature. The questions used a six point Likert-type scale that ranged from Strongly Disagree to Strongly Agree. With this scale there is no midpoint rating. For this scale a mean value greater than 3.5 indicates agreement and less than 3.5 indicates disagreement. We developed five scales that correspond to our independent variables; (1) access to decision makers, (2) cell membership, (3) level of individual empowerment, (4) decision-making process and information flow, and (5) leadership. We first analyze some of the overall descriptive statistics and discuss each variable with its associated questions. We then present a summary of descriptive statistics.

1. Overall Model

Leadership had the highest independent variable means (4.8) and empowerment had the lowest (4.0). Looking at individual questions, “Intelligence products reach decision makers” (Q10) had the highest results for agreement with a mean of 5.1.⁶¹ The other most positive results (mean of 5.0) were found with the following questions: “pass time sensitive information to decision makers” (Q14), “clearly understand requirements from other FC members” (Q34), and “FC leadership understands the importance of interagency relationships (Q41). The question with the least agreement with a mean of 3.8 was Q18, “FC members arrived with sufficient experience to be an asset”. Other low results (mean of 3.9) were found with the following questions: “leadership regularly visits (Q15), “parent organization prepared me for the FC mission (Q22), and “parent organization prepared me clear guidance as to my role in the FC (Q28). We asked four

⁶⁰ Current/Past service on an FC: 41/78. Size of FC: average 29. FC Location: 62 CONUS/61 OCONUS. # agencies supported: one-15, two-10, three-14, four-16, five-10, six or more-58.

⁶¹ All statements regarding frequency responses are from Appendix A, Table 1: Frequency of Response, Mean, and Standard Deviation by Question, 27.

questions in this survey where “agreement” as a response was undesirable (Q26-27 and Q36-37). These questions were recoded to make their responses analytically compatible with the rest of the survey. Of note, Q26 (routinely consult parent organization prior to releasing information to the Fusion Cell, mean of 3.4) and Q27 (required to consult parent organization prior to offering input on critical matters, mean of 3.0), have the lowest mean values in the survey after recoding for comparability. In summary, across all of our independent variables there are areas where FCs can/need to improve their performance. Table 1 includes the means and standard deviations for the independent variables.

Independent Variable	Mean	Standard Deviation
Access to Decision Makers	4.4	1.3
Cell Membership	4.1	1.4
Empowerment	4.0	1.5
Decision Making Process/Information Flow	4.4	1.4
Leadership	4.8	1.2

Table 1. Independent Variable Means and Standard Deviations

2. Access to Decision Makers

The results in Table 2 show that overall, survey respondents believe their products influence decision makers and more importantly, that those products are involved in the decision making cycle. Being able to “do” something with the information and analysis is an important component in a FC’s overall effectiveness. Regardless of whether or not a capture/kill mission launches or state police execute a search warrant as a result of an FC’s hard work, the FC must interface with a decision maker who has the authority to execute action. If a FC has either a direct line or a trusted relationship with decision makers, their ability to turn analysis into action is greatly enhanced.

Table 2 indicates that overall FC participants report that their own influence on decision makers is robust (Q10 mean of 5.1). However, questions oriented specifically on the personal relationship between decision makers and FCs revealed a less direct relationship. Almost 40% of respondents believe they did not receive regular feedback from the leadership of organizations the FC supported (Q13) and one-third of respondents

believe senior leaders did not visit regularly their FC (Q15).⁶² These questions concerning the FC/senior leader relationship have the highest standard deviations; suggesting there is some disparity across FCs on this subject. If access to decision making is the most important variable (via regression analysis), then questions describing the relationship between an FC and those decision makers are important. Assuming that more interaction between an FC and senior leaders is positive, then the results for Q13 and Q15 are suggest areas where specific improvements could be made to increase FC effectiveness.

Questions for Access to Decision Makers	Mean	Standard Deviation
Q10. Intelligence products influence decision makers.	5.1	1.1
Q11. Intelligence products reach all key decision makers.	4.3	1.2
Q12. Intelligence products reach decision makers fast enough to positively effect outcomes.	4.4	1.2
Q13. Receives regular feedback from the leadership of the organizations supported.	3.9	1.4
Q14. Can immediately pass time sensitive targeting intelligence to key decision makers.	5.0	1.5
Q15. Supported organizations leadership regularly visits.	3.9	1.5
Access to Decision Makers Scale Statistics		
Mean	Standard Deviation	Sample Size
4.4	1.3	112
		Cronbach's Alpha
		0.89

Table 2. Descriptive Statistics for *Access to Decision Makers*

3. Cell Membership

We hypothesize that FCs must have interagency representation and high quality personnel in order properly conduct fusion. More than 70% of survey respondents agreed that FCs had appropriate interagency representation (Q19: 73% agreed) and trained individuals (Q16: 77% agreed). While this is a strong majority, it is important to note that roughly 30% did not think their FC had appropriate interagency representation. Interview responses indicated that some agencies are more important to include in a FC

⁶² Using the Likert scale, disagreement equates to combining survey responses of 1-strongly disagree, 2-disagree, and 3-mildly disagree and agreement to combining 4-mildly agree, 5-agree, and 6-strongly agree. See Appendix A, Table 1: Frequency of Response, Mean, and Standard Deviation by Question, 27.

than others; however, there is no standard template or doctrine concerning what that mix should be. In addition, interview results confirmed and further highlighted the importance of FC personnel training. Survey results further confirmed this finding; 39% of respondents did not believe “every member had sufficient experience” (Q18) and 37% did not believe their “parent unit trained them properly” (Q22).

The results in Table 3 below indicate that there is general, albeit not enthusiastic, agreement concerning the proper mix, size, and personnel capabilities of FCs (Q19 mean of 4.2 and Q21 mean of 4.1). Survey respondents had the opportunity to suggest other organizations that should be on their FC. Less than one-third of respondents did and their responses did not have any pattern or trends. There is less consensus and belief that FC members arrive with the appropriate skills to be successful (Q18 mean of 3.8, Q20 mean of 4.0, Q22 mean of 3.9). The item with the highest standard deviation for this independent variable (IV) concerns how parent organizations prepare their personnel (Q22). This suggests some disparity among organizations (i.e., some do a better job than others). Further analysis of the question concerning whether or not your parent organization prepared you properly reveals that OGA respondents had the highest standard deviation (1.8). These results suggest that organizations that provide personnel to FC’s need to improve their pre-deployment training and personnel selection processes.

Questions for Cell Membership	Mean	Standard Deviation
Q16. Members have the proper level of training to be effective.	4.1	1.4
Q17. Other members are top-level performers.	4.4	1.2
Q18. Every member arrived with sufficient experience to be an asset to the mission.	3.8	1.4
Q19. Have the appropriate military and civilian organizations to execute its mission.	4.2	1.0
Q20. Parent organization carefully selects and screens personnel to Fusion Cells.	4.0	1.5
Q21. Has the appropriate number of personnel to be effective.	4.1	1.3
Q22. Parent organization properly prepared me to be an effective member of this Fusion Cell.	3.9	1.6
Access to Decision Makers Scale Statistics		
Mean	Standard Deviation	Sample Size
4.1	1.4	112
		Coefficient Alpha
		0.78

Table 3. Descriptive Statistics for *Cell Membership*

4. Level of Individual Empowerment

This scale seeks to illuminate how much authority an FC member's parent organization delegated to him/her on the FC. Our hypothesis is that more delegation is better because it would enable the FC member to respond to the unique needs/requirements of the FC more efficiently. Agreement is undesirable on the questions regarding the routine practice of consulting the parent organization (Q26) and the requirement to consult the parent organization (Q27). In order to compare these questions to the other scales, they must be reverse coded (1=6, 2=5, 3=4, 4=3, 5=2, 6=1). Questions in this scale seek to determine the nature of the FC member's relationship with their parent organization.

Questions for Level of Individual Empowerment	Mean	Standard Deviation		
Q23. Regular contact with parent organization.	4.8	1.2		
Q24. Have access to appropriate personnel in parent organization to support the Fusion Cell mission.	4.5	1.5		
Q25. Empowered by parent organization to make rapid decisions.	4.5	1.4		
Q26. Routinely consult parent organization prior to releasing information to the Fusion Cell.	3.4*	1.6		
Q27. Required to consult parent organization prior to offering input on critical matters.	3.0*	1.5		
Q28. Parent organization gave clear guidance as to my role within the Fusion Cell.	3.9	1.6		
Q29. Parent organization clearly understands my role within the Fusion Cell.	4.1	1.6		
Access to Decision Makers Scale Statistics				
Mean	Standard Deviation	Sample Size		
4.0	1.5	111		
Coefficient Alpha				

*Item was reverse coded for comparability of means.

Table 4. Descriptive Statistics for *Level of Individual Empowerment*

Clearly, empowerment is an issue. Not all FC members have the ability to release information within the cell or provide input on critical matters without consulting their parent organization (Q26 mean 3.4 and Q27 mean 3.0). Interestingly, for this scale state and local respondents were the least empowered group (mean of 2.9). A possible explanation is that they have to resolve jurisdictional problems for specific cases. Although respondents indicated they were able to get support from their parent organization (Q23 mean 4.8 and Q24 mean 4.5), the specific results for state and local respondents and overall results for Q26 and Q27 indicate that it is not standard for all members to be empowered by their parent organization. Thus, some FC members cannot rapidly decide on their own accord what of their agency's information is releasable to the FC and what input they can provide to the FC (i.e., their agency's or their own analysis). Moreover, it appears that parent organizations do only a fair job at providing guidance to cell members (Q28 mean 3.9) and in understanding what their personnel are doing on the FC (Q29 mean 4.1).

5. Decision-Making Process and Information Flow

This scale examines the organizational design of the FC and seeks to illuminate what approach to decision-making and information sharing are being used by FCs. Again, agreement on the questions regarding members who cannot and will not share information (Q36 and Q37) is not desirable. Reverse coding these two items results in Q36 values of 4.0 (those who cannot share) and Q37 values of 3.8 (those that will not share information). Frequency analysis indicates a disparity in the findings: 64% of respondents agreed that some members did not share information (Q36); 57% of respondents agreed that some members would not share information (Q37); but 83% of respondents categorized their FC as having open and complete information sharing (Q35). This is significant and of concern. An FC's power is in its ability to integrate different specialties and expertise so as to increase its analytic capabilities. Thus, only 36% of respondents agreed all FC members shared information (Q36), 43% agreed everyone shared information (Q37) and 17% of respondents agreed that their FC did not have open and complete information sharing (Q35). This finding highlights an area for further study and one that every FC should examine.

In terms of FC decision making processes, it appears that respondents moderately agree that their FCs have clear internal processes, make decisions rapidly, understand their fellow FC member requirements, and can access operational elements easily (respective means of Q30 of 4.5, Q31 of 4.4, Q32 of 5.0, and Q33 of 4.6). In fact, respondents were quite uniform in their agreement, only varying one percentage point from 79-80% for Q30-33 and 90% for Q34. According to this scale, a significant number of FCs self characterize their internal decision making processes in positive terms. However, as noted above, internal FC information flow is problematic and a potential source of inefficiency.

Questions for Decision-Making Process and Information Flow	Mean	Standard Deviation
Q30. Clear decision-making process within the Fusion Cell.	4.5	1.4
Q31. This Fusion Cell makes rapid decisions.	4.4	1.4
Q32. Decision making process within the Fusion Cell is effective.	4.4	1.4
Q33. Fusion Cell can easily access operational elements.	4.6	1.4
Q34. Clearly understand information required from me by other Fusion Cell members.	5.0	1.0
Q35. Norm for this Fusion Cell is open and complete information sharing.	4.7	1.4
Q36. There are members of this Fusion Cell who cannot share information.	(4.0)	1.6
Q37. There are members of this Fusion Cell who will not share information.	(3.8)	1.7
Decision Making and Information Flow Scale Statistics		
Mean	Standard Deviation	Sample Size
4.4	1.4	112
		Coefficient Alpha
		0.82

Table 5. Descriptive Statistics for Decision Making Process and Information Flow

6. Leadership

This scale seeks to identify what styles or types of leadership are successful in FCs. Our hypothesis, as stated previously, is that FCs that have decentralized organization and internal mechanisms characterized by mutual adjustment have better outcomes. The leadership style found in FCs will strongly influence the organizational design structure and processes in the FC. Moreover, leadership style takes on even more importance in ad-hoc organizations like FCs due to their personnel and agency mix.

Respondents identified FC leadership as enabling, encouraging information sharing, cognizant of each person's capabilities, and understanding of the importance of interagency relationships (respective means of 4.8, 4.9, 4.8 and 5.0). Respondents also believe that FC leadership appreciates and actively engages key decision makers in the organization(s) that the FC supports (direct access mean of 4.9 and regular contact mean of 4.6). This scale has the largest mean and smallest standard deviation; agreement on these questions is relatively widespread and uniform. For example, frequency analysis shows that 88% of respondents believed that the leadership of their FC understood the importance of interagency relationships.

Questions on Leadership	Mean	Standard Deviation	
Q38. Leadership enables the Fusion Cell to accomplish our mission.	4.8	1.3	
Q39. Leadership encourages transparent information sharing.	4.9	1.2	
Q40. Leadership understands what I (respondent) have to offer.	4.8	1.2	
Q41. Leadership understands the importance of positive interagency relationships.	5.0	1.4	
Q42. Leadership has direct access to key decision makers of the organizations we support.	4.9	1.1	
Q43. Leadership makes regular contact with the key decision makers of the organizations we support.	4.6	1.3	
Leadership Scale Statistics			
Mean	Standard Deviation	Sample Size	Coefficient Alpha
4.8	1.2	112	0.90

Table 6. Descriptive Statistics for *Leadership and Scale*

D. REGRESSION ANALYSIS

We conducted regression analysis on the survey data to test our hypothesis: effective FCs are the result of five independent variables: (1) access to decision makers, (2) proper FC membership, (3) empowered FC members, (4) flat decision making processes/unimpeded information flow, and (5) positive FC leadership. As discussed in Chapter IV, the survey had six to eight questions designed to measure each independent variable. To get each variable's value, we took the average rating for all questions associated with that variable. We then ran several regressions with proxy dependent variables to determine the best fit. The proxies were survey questions that best represented FC effectiveness.⁶³ We found the best correlation between these proxies and the independent variables with Q46, "This Fusion Cell is effective."⁶⁴ We then divided

⁶³ The proxy dependent variables were (DV1) This Fusion Cell's products influence decision makers, (DV2) This Fusion Cell's intelligence products reach all key decision makers, (DV3) When necessary, this Fusion Cell can immediately pass time-sensitive targeting intelligence to key decision makers, and (DV4) This Fusion Cell is effective. Although proxy DV2 has a R^2 value > DV4 and f stat numbers differ (DV2: 61.38 and DV4: 39.59), it is a better fit because the root MSE values are higher in DV4 and most importantly, because DV4 is not part of IV1 like all of the other proxy DVs.

⁶⁴ Regression results for each DV proxy are as follows. DV1: $R^2=0.621$, f stat=35.18, p stat=0.000, root MSE=0.0692, DV2: $R^2=0.744$, f stat=61.83, p stat=0.000, root MSE=0.635, DV3: $R^2=0.600$, f stat=31.53, p stat=0.000, root MSE=0.941, DV4: $R^2=0.675$, f stat=39.59, p stat=0.000, root MSE=0.799. See Appendix I for more details.

the data by agency (DoD, State and Local, OGA). DHS (5) and DoJ (2) were combined with OGA to create OGA(+); DHS and DoJ were omitted from OGA(-). We then conducted regression analysis using our proxy dependent variable on the entire sample (N=101) and then with DoD (N=67), State and Local (N=21), and OGA(+) (N=17) and OGA(-) (N=12).⁶⁵ We conducted a variety of tests, including the Ramsey retest to test for omitted variables and the Breusch-Pagan test to for heteroscedasticity. All of these tests indicated valid results.⁶⁶

1. Results

The main result is that, for our overall model, all of our independent variables have a significant ($p<0.05$) relationship with the dependent variable. The two most significant variables are access to decision makers and the decision making process/information flow. Further parsing of the data, by agency, exposed important and surprising differentiation among variables. We relaxed the standard for p values to <0.10 due to our small sample size. Several of our sub-model results are statistically insignificant ($p>0.10$; shaded areas in table). We discuss these results in Chapter VI in order to understand why they varied from the overall model and to suggest areas of study for future research.⁶⁷ Our analysis leads us to several important conclusions regarding FCs and how to improve their effectiveness.

⁶⁵ OGA (+) includes two respondents from DoJ and three from DHS. OGA(-) is respondents from CIA, NSA, and the NGA.

⁶⁶ For the overall model: the mean variance inflation factor (VIF) was 2.47; visual inspection of kdensity and pnorm graphs indicate no systemic pattern in the residuals; using the Breusch-Pagan test to check for the homogeneity of variance of the residuals results in a p-value of 0.007, using the Ramsey retest to check on model specificity results in a p-value of 0.08 thus confirming the model does not appear to have omitted variables. See Appendix I for more details.

⁶⁷ Where $p>0.10$, although statistically insignificant, we will present possible reasons why that specific hypothesis may or may not have a substantively significant effect. Since the overall model is valid, we will report on those findings and believe these findings merit further study. Christopher H. Achen, *Interpreting and Using Regression*, Sage Publications: Newbury Park, CA, 1982, 48–52.

Model	IV1: Access		IV2: Membership		IV3: Empower.		IV4: Decision/ Info flow		IV5: Leadership	
	Coeffi c.	P value	Coeff ic.	P value	Coeff ic.	P value	Coeff ic.	P value	Coeff ic.	P value
All	.52	.00	.18	.01	.07	.05	.48	.00	.10	.05
DoD	.91	.00	.13	.36	-.11	.43	.16	.40	.05	.78
State Local	.46	.26	.40	.26	.07	.86	.61	.12	-.18	.68
OGA(+)	-.05	.78	.06	.80	-.60	.10	1.1	.00	.76	.01
OGA(-)	-.20	.50	-.14	.54	-.75	.07	1.7	.01	.74	.04

Table 7. Regression Analysis by coefficient and p-values from Appendix A.
Shaded areas indicate p>0.10

a. *Complete Model Analysis*

The variables, in rank order of regression coefficients, are access to decision makers (0.52), decision making process/information flow (0.48), FC membership (0.18), leadership (0.10), and empowerment (0.07).

FC's translate their output (analytical) into action by getting a decision maker to authorize a force to take action. Respondents believe that this is the most important variable on FC effectiveness. Although it may sound like a truism, these results confirm that if an FC can get in front of a decision maker, they can be successful. The DoD model (discussed below) will further highlight the importance of this variable.

Examining the individual questions that make up the second most important variable, decision-making processes and information flow (see Table 4), suggests that FCs are strongly influenced by open information sharing and clear internal decision making processes. Further study is necessary to determine causality between these specific attributes and effectiveness. Furthermore, analysis of respondents who had negative comments about this variable (generally due to a lack of information sharing within the FC) reinforces this finding. To be effective, a FC should have internal transparency and well-defined internal procedures. The regression coefficient values then tail off significantly for the next three variables, but all are significantly related to the dependent variable.

The relatively low relationship between empowerment and effectiveness could be a unit of analysis problem: instead of empowerment from the parent organization, it is empowerment within the FC. FC members are inherently empowered from their own perspective because they are the only (usually) representatives of their parent organization. As such, the other FC personnel view fellow members as their respective agency's de facto authority and subject matter expert. Thus, in the FC, that agency representative is the person everyone else goes to with questions and/or requests related to that specific agency. However, fellow members most likely do not have any insight into how empowered that person is within their parent organization. Given these internal FC dynamics, FC members may believe that they are all empowered and thus may not view this variable as having a strong influence on effectiveness. For instance, 82% of respondents agreed to Q25 (empowered by parent organization to make rapid decisions).

Leadership (enabling, encouraging, and guiding the FC) does not have a strong influence on effectiveness. A partial explanation may be that leadership skills are not as important in an FC because members are generally experienced, educated, and/or peers. Thus, FC personnel in combination with the dynamic, flat manner in which they operate do not require directive leadership. FC members also may not observe one of the critical aspects of leadership at the FC level, interaction with decision makers. It is generally the FC leadership that presents, argues for, and/or advocates for the FC to a decision maker. Thus, it may be that a combination of relatively low leadership requirements and unobserved actions resulted in only a slight influence on effectiveness for this variable.

b. DoD Model Analysis

The variables are in the same regression coefficient rank order as the overall model. However, only access to decision makers is statistically related to the

dependent variable. A why are all of the other independent variables not statistically significant is presented in the Sub-Model variance section below. The DoD model itself is valid.⁶⁸

Statistical Analysis: Why is access to decision makers so critical for DoD respondents? We believe that this finding highlights a “layers of bureaucracy problem” within DoD. Respondents commented on the problem of trying to get an FC action to the right decision maker. In order to get to the decision maker, FC’s have to go through a variety of staffs, senior officers, and flag officers. If an FC can cut through the layers, then they can access “the” decision maker (vice a gatekeeper). We believe that the DoD respondents were likely the most sensitive to this problem, thus making it the most significant coefficient value for this variable.

c. State and Local Model Analysis

Regression coefficient rank order is different from the overall model (decision-making process and information flow, access, membership, empowerment, and leadership). However, all independent variables are statistically insignificant due to p-values ranging from 0.12 to 0.86. The overall state and local model itself is valid.⁶⁹ A discussion of possible reasons why all of the independent variables are statistically insignificant for the State and Local model is presented Chapter VI.

d. OGA Model Analysis

This model has two variants: (+) includes DHS and DoJ respondents (N=17) and (-) only contains representatives from NGA, CIA, NSA (N=12). This

⁶⁸ For the DoD model: the mean variance inflation factor (VIF) was 2.9; visual inspection of kdensity and pnorm graphs indicate no systemic pattern in the residuals; using the Breusch-Pagan test to check for the homogeneity of variance of the residuals results in a p-value of 0.25, using the Ramsey retest to check on model specificity results in a p-value of 0.59 thus confirming the model does not appear to have omitted variables. See Appendix A for more details.

⁶⁹ For the State and Local model: the mean variance inflation factor (VIF) was 4.1; visual inspection of kdensity and pnorm graphs indicate no systemic pattern in the residuals; using the Breusch-Pagan test to check for the homogeneity of variance of the residuals results in a p-value of 0.227, using the Ramsey retest to check on model specificity results in a p-value of 0.023 thus confirming the model does not appear to have omitted variables. See Appendix A for more details.

distinction is made to highlight the relatively higher importance placed on these three agencies within a fusion cell. The results are discussed below only for OGA (-) because testing of the OGA (+) model revealed significant inconsistencies.⁷⁰ The variables for OGA (-) are not rank ordered like the overall model. For the OGA(-) model the variables are rank ordered as follows: decision-making process, leadership, and empowerment. Access to decision makers and membership are not statistically valid.

Statistical Analysis. P-values for both model regressions are within limits (relaxed standard of $p < .10$) for decision-making process and information flow, leadership, and empowerment. Of note, the decision-making process and information flow coefficient variable is the highest for all models (1.7). Possible explanations could be that for OGA respondents, getting anything through their bureaucratic structures is success (i.e., being cited for having a product or analysis briefed = potential for promotion). Another alternative is that OGA FC members, because of their access to unique information, fully understand that for the FC to be successful information sharing must occur. Interview material suggests that several agencies are known for not fully sharing information to the detriment of the FC.

OGA respondents also highlighted leadership as a powerful influence on effectiveness. As the descriptive statistical analysis indicated for leadership, OGA respondents react well to a more decentralized, enabling leadership style. These results suggest FC leaders should, when dealing with OGA members, utilize this style if possible. Empowerment is also statistically significant ($p < 0.10$) with a negative coefficient of -.75. That is to say that any increase in empowerment has a powerful negative feedback loop on FC effectiveness. A possible explanation for this result is that,

⁷⁰ For the OGA(-) model: the mean variance inflation factor (VIF) was 4.2; visual inspection of kdensity and pnorm graphs indicate no systemic pattern in the residuals; using the Breusch-Pagan test to check for the homogeneity of variance of the residuals results in a p-value of 0.019, using the Ramsey retest to check on model specificity results in a p-value of 0.120 thus confirming the model does not appear to have omitted variables. However, OGA(+) had the following results: VIF was 3.27; visual inspection of kdensity and pnorm graphs indicate no systemic pattern in the residuals; the Breusch-Pagan test resulted in a p-value of 0.26, and the Ramsey retest resulted in a p-value of 0.73. The results for the last two tests indicate a problem with variance homogeneity and the potential of omitted variables. See Appendix A.

within their parent organizations, OGA members are not empowered (strict limits and rules) and view that model as being successful. Individual survey question analysis indicates that OGA members were generally not empowered by their parent agency while serving on FCs. Thus, a potential explanation for an OGA member is that the FC's success is tied to their input and that input is derived from a model where the analyst is not empowered.

E. INTERVIEW RESPONSES

We conducted six interviews with 20 individuals who had served on FCs and two senior leaders who were “consumers” of FC products, i.e., decision makers.⁷¹ The results mirrored the survey responses overall, but highlighted several critical factors related to FCs that were not included in the survey (politics, measures of effectiveness, training). Politics, for the interviewees, meant the interplay between different agencies, consumers, and missions. Critical internal factors mostly focused on one issue in particular: training. A common theme among interviewees emerged regarding effectiveness: metrics are changed to reflect success. In terms of overall counter-terrorism efforts, several interview subjects stated that without an interagency effort, effective counter-terrorism is impossible. The highlights of these interview themes are presented below.

1. Politics

Interviewees spotlighted the importance of one or two specific agencies (CIA and NSA), without which, effective counter-terrorism success is believed impossible. Interviewees also stressed the importance of parent agency support for all members of the FC. Agency support plays an important role in supplying the FC with quality individuals and in providing the FC with reach-back support. According to interviewees, this effects an FC because there is a constant requirement to try and maintain FC buy-in from all parent agencies. Interviewees also mentioned that FC's that have higher profile missions do not have as much difficulty ensuring parent agency support.

⁷¹ See Appendix B.

2. Effectiveness

Determining measures of effectiveness is problematic as it relates to FCs. Interviewees alleged that FC effectiveness metrics can be and are changed in order to make some FCs look better (i.e., lowering standards and/or changing targets). Interviewees also discussed how FCs, over time, can shift away from their original mission due to a variety of reasons (new requirements, changing leadership, emerging trends). The issue, as it relates to effectiveness, is that these changes do not result in a similar change in the FC's resource base. The FC is then not resourced properly and performance suffers due to this mission creep. At the individual level, interviewees stated that personality conflicts and individual agency (and by extension that agency's representative on the FC) information sharing problems contributed to FC ineffectiveness.

3. Training

Interviews highlighted training problems, at the analyst and leadership level, as a significant limiting factor on an FC's ability to accomplish its mission. The problem is knowledge of both your own agency's capabilities and the capabilities of all other agencies on the FC. Specifically for FC leadership, it involves knowing who the right person is to answer your question and the right question (as it pertains to that specific agency) to ask. Additionally, if an agency sends a junior or inexperienced analyst, then their limited knowledge of their own agency's abilities and products limits the FC. Interviewees stressed that having this knowledge prior to serving on an FC obviates the need for the FC to spend significant time and resources devoted to internal training requirements.

F. MEASURES OF EFFECTIVENESS

Defining and measuring effectiveness for FCs is problematic for several reasons. Survey results and interviews both indicate that most FCs self-define effectiveness, and by extension their measurement of it, differently. As will be shown below, the numerous definitions used by FCs have in turn a myriad of metrics. Although some patterns

emerge from this analysis, not having anything close to a standard means to capture FC effectiveness leads to a tautological problem; just producing x number of reports a day does not necessarily equate to effectiveness.

We expected to develop a coherent, common definition of FC effectiveness to serve as our dependent variable. The answers to Q44 (How does your Fusion Cell measure success?) and the comments section of the survey revealed no common unit of measure. How can an FC whose members all want to be successful (promotion, medals, intrinsic desire) and whose leadership is evaluated in terms of how successful it is, avoid the trap of creating a definition or set of conditions that the FC can easily meet or be the only entity capable of measuring? We will discuss this issue below using both survey and interview responses.

1. Survey and Interview Responses

The following is a partial list of the survey responses we received to the question of how do you measure success on your FC:

- number of target packages updated
- prevention of terrorist action or case being solved
- client feedback
- rapid response to a request for information
- number of positive outcomes
- number of intelligence reports created
- producing daily products on time
- successfully forecasting trends
- number of terrorists captured or killed
- senior leadership (Flag Officer) happiness
- shared understanding of the enemy situation
- no significant events occurring
- perceived value to units supported
- changes in behavior

This list demonstrates the range of metrics that FCs use. Many of these units of measurement do not have direct links to effects on terrorists, they only define how well internal mechanisms function. The comments listed below from respondents on the subject of effectiveness highlight the measurement challenges.

A survey respondent provided the following narrative regarding success and how his DoD FC in Iraq defined success in terms of “quantifiable improvement in the efficient delivery of services, economic progress, and notable changes in behavior (lethal and non-lethal).” His narrative demonstrates the difficulty involved in determining effectiveness for FCs; how can an FC measure success in terms that clearly do not have a direct relationship with an FC (e.g., economic progress)? Yet, at the same time few would argue that this FC was not effective.

This FC’s area in Iraq began to see an increase in female suicide bombers. The FC researched the issue and determined the women were widows and/or marginalized in their communities. The FC then worked with the supported command, local authorities and third-country partners to develop a government funded project designed to develop alternatives for these women (employment training programs, etc.). The FC then helped to design an information campaign to publicize the program and interfaced with other U.S. agencies to facilitate construction of a community building and further funding of the program.

The results in this case were that local Imams convinced around 15 women destined to be suicide bombers to accept reconciliation. In one case, a 15 year-old woman turned herself in while wearing a suicide vest. Because of this program, over 200 jobs were created and social services for disadvantaged women were provided for a community. According to the respondent, the net results also included increased local governmental capacity, decreased suicide attacks, increased community usage of community services, and an increase in targets captured and/or killed. Without an in depth case study to help determine causality, the exact role of the FC in achieving these effects is difficult to quantify. However, this respondent’s story illustrates both the

powerful effect FCs can have in bringing together an inter-agency intelligence fusion and the inherent difficulty in precisely measuring FC effectiveness.

2. Survey Results

The survey asked respondents to quantify, in terms of a percentage, how many of their FC products led to an action (i.e., capture/kill, arrest). The responses to this question further reinforce our findings concerning the difficulty in measuring FC effectiveness and provide an interesting perspective on FCs. Analysis of these responses revealed the following breakdown and categorization for 82 responses (55% DoD, 35% State and Local, 10% OGA)

What percentage of your FC's products led to effects (capture/kill mission, arrest)?		
<u>Response</u>	<u>Total</u>	<u>% of Total</u>
None/Unknown	21	25
1-20%	24	29
21% and higher	37	45
Sample Size= 82		

Table 8. FC Products and Action from Appendix B

We analyzed the comments from respondents who answered none/unknown and evaluated how they differed from the comments from the other two categories. We found that the first category includes respondents who characterized their response in terms of failure or as having measurement problems. They indicated their FC's did not have the means to measure their own effectiveness. Table 8 shows that almost half of all respondents believed that every fifth product (or higher) produced by their FC resulted in an effect.

These numbers suggest that these FCs are keeping many military and law enforcement units busy. Nevertheless, several respondents highlighted some inherent difficulties in taking these numbers at face value. The most critical response we received

pointed out how difficult it is to determine to what degree a specific FC action or product has in the execution of a mission or operation. The respondent stated:

This is a tainted question, products do not lead to effects. It is through a streamlined process of identifying actionable intelligence, informing decision makers, and getting action agents postured to successfully kill/capture/arrest. This is the difference between production centric intelligence and understanding operational intelligence / processes.

This criticism is not new in the intelligence field and points out the difficulty involved in applying metrics to measure the effectiveness of intelligence products. The final chapter will include several recommendations on how to overcome this problem in FCs.

The survey also asked respondents to evaluate the effectiveness of their FC using a 6-point Likert scale (1=strongly disagree to 6=strongly agree). As the previous discussion has highlighted, “effective” is a difficult term to define and measure. This survey question instead sought to determine how the respondents self identified effectiveness on their FCs. This question subsequently became our proxy dependent variable with a mean of 4.49 and standard deviation of 1.36.

This result may seem to contrast with the question concerning what percentage of products lead to effects in Table 6 above. One quarter of all respondents for that question stated that the work their FC did either produced no effect at all or they did not have the means to measure their effects. The parallel finding in the effectiveness rating is that 20% of all respondents answered this question negatively (disagreed).

This survey question also asked for comments on the overall rating of FC effectiveness. One particular respondent provided a response that highlights the upside to FCs when they are effective:

The fusion cell, when staffed with the appropriate members and given enough time to form a team, is one of the unique environments where organizational parochialism dissipates. Moreover, the fusion cell's mix of professionals allows for different approaches and perspectives to address a problem. These individuals highlight previously unknown avenues for action and enable cross-cueing/leveraging of organizational capabilities.

In their comments on this question, several respondents also highlighted some potential pitfalls in measuring FC effectiveness:

the XXX had little ability to husband resources in support of the mission, and no way to hold national agencies accountable for failure to support. As a result, collections were haphazard, and actionable targeting data exceedingly scarce. Some of the XXX's accidental successes, however, would not have occurred except for the fact that analysts had no other option but to rely on their creativity, unconventional sources and processes in order to accomplish the mission. Few analysts at the XXX had the personal motivation to work that hard, but those that did were successful despite the XXX, not because of it.

The above comments from respondents provide two contrasting descriptions of effectiveness and point out the importance of the process, or luck as the above respondent would say, as it relates to the ends.

G. RESULTS SUMMARY

Survey respondents confirmed the importance of, with some variation, the five independent variables. All of the independent variables for the overall model were statistically significant ($p < .05$). However, for the sub-models not every variable was statistically significant. The below list (in rank order) summarizes the findings, both from descriptive and regression analysis, for each variable:

3. Access to Decision Makers

Access is the most important variable bearing on FC effectiveness. It was also the most influential variable by far for DoD respondents. 92% of FC respondents believe their products influence decision makers. However, only 60% of respondents reported that their FC's receive feedback from decision makers and decision makers only about one-third of respondents reported that decision makers visited their FC. These results suggest a gap between how the FC producers and consumers view their relationship. FC leaders should examine their relationship with decision makers.

4. Decision Making and Information Flow

Although FC internal processes promote efficient work practices; information is not always shared with all FC members. For instance, 83% of respondents believed their FC had open and complete information sharing, yet an average of 60% of FC members stated that other members could not or would not share information. Preliminary data for OGA and regression analysis indicates this is an important variable for effectiveness.

5. FC Membership

Interagency representation is a must but there are quality and/or training issues with personnel from some agencies. Close to 40% of respondents believed either they themselves or other members were not appropriately trained prior to their FC service. Interviews indicated the importance of fusing interagency efforts. These findings suggest that FCs should encourage more pre-deployment training and improve the selection process.

6. Leadership

FC members believe they have quality leadership on their FC and that overall it has a small positive impact on effectiveness. However, preliminary OGA data suggest that interagency leadership skills do strongly impact effectiveness. The ability of an FC leader to brief product to decision makers is important.

7. Empowerment

This variable had the weakest impact on FC effectiveness and had negative coefficients for OGA. Although there are issues of support and guidance between FCs and member's parent organization; this variable had a minimal positive impact on FC effectiveness.

Attempting to compare the relationship between these five variables and FC effectiveness revealed several problematic issues for FCs. Survey results indicate a significant number of FCs have measures of effectiveness that are so subjective as to render them useless, difficult to determine causality, only relate to internal processes, or

are nonexistent. Interviews with former and current FC members suggested that measures of effectiveness are also open to manipulation (“moving the goalposts” in order to demonstrate success). Interviews also indicated that parent organization support is critical, support from the CIA and NSA equates to FC success or failure, and FC members and leadership need to understand each other’s capabilities. Most importantly, we believe these results provide us with the necessary information to make policy and practical suggestions on how to improve the effectiveness of FCs.

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VI. RECOMMENDATIONS AND CONSIDERATIONS

A. INTRODUCTION

This project began with the intent of exploring ways in which the interagency coordination process could be improved in order to better facilitate global counter-terrorism efforts. To accomplish this, our team studied interagency fusion cells in great detail through the survey and interview process described in previous chapters. The most significant variables related to FC effectiveness are access to decision makers and decision-making process/information flow. All of the independent variables for the overall model were significantly ($p < 0.05$) related to the dependent variable of FC effectiveness. However, for each of the sub-group samples, not every independent variable was statistically significant (>0.05). An additional finding from our research is that currently there is no standard, commonly accepted definition for FC effectiveness (our dependent variable). It is our belief that we have gathered and analyzed sufficient empirical data to offer prescriptive recommendations on two levels:

1. *Micro-policy recommendations*: These are the core takeaways from our research, recommendations that can quickly improve the effectiveness of a given fusion cell. This section will offer suggestions on three levels:
 - a. *External leadership*: Best practices for utilizing a fusion cell
 - b. *Fusion cell leadership*: Best practices for leading an effective fusion cell
 - c. *Fusion cell membership*: How to be an effective part of a fusion cell
2. *Macro-policy recommendations*: Drawing from the interagency-relationship data seen in the detailed study of fusion cells, this section offers suggestions for more efficient interagency coordination at the national level.

B. MICRO-POLICY DISCUSSION AND RECOMMENDATIONS

These recommendations are intended to be practical and implementable in order to see swift improvements in the performance of today's fusion cells. For precise data on why and which variables are seen as more or less important, refer to Chapter V and the data appendix.

Outside Leadership: These suggestions are targeted at senior leadership to whom a given fusion cell is offering analysis.

1. Make Yourself Accessible

a. Discussion

As shown in Chapter V, “access to leadership” proved to be the most strongly correlated IV for most organizations. Fusion cell members put the greatest importance on a need to know that the data they produce is reaching key decision makers. This was seen most strongly in Department of Defense members and we hypothesized that this was due to the hierarchical nature of the military system, making seasoned military professionals wary of how slowly the military bureaucracy can move. Effective fusion cells give members the unique opportunity to sidestep those layers with mission-critical information when they have direct access to the leadership they support.

b. Recommendation

As an outside leader whose unit is being supported by a fusion cell (to which, in optimal circumstances, you have contributed talented personnel), you must make the FC a priority by maintaining open lines of communication with the FC’s leadership. It is not enough to see the FC as simply another element for intelligence analysis and wait for their reports to trickle up through the system. The FC is frequently pulling together information from multiple elements in order to coordinate actions and recommend operations that no single unit would be capable of executing without the synchronization efforts of the FC. Or, for those FCs that don’t supply complete analysis (such as the JTTFs or state and local FCs), they are still synchronizing the views of multiple organizations and require a rapid method to distribute their findings to the

organizations they support. Many FCs are real-time-oriented elements; rapid and direct access to leadership is the only way to maximize what it is they offer – synchronized but often time-sensitive operational choices and recommendations.

2. Define Success—What do You Expect the Fusion Cell to Provide?

a. Discussion

A struggle throughout this research has been defining what effectiveness is for a fusion cell. Ultimately, as discussed in Chapter V, our research team utilized a proxy DV drawn from our survey questions. The question asked “is your fusion cell effective?” We found strong correlation between the answers to this question and the respondents’ answers to our other IVs. We also pulled a large amount of information from the open-ended questions of our survey and from interviews by asking people how they defined success in their fusion cell. There was significant disparity in the answers we collected. Some of this can be attributed to the different types of FCs (e.g., CONUS versus OCONUS, State and Local versus Iraq or Afghanistan), but even within similarly focused fusion cells there was a lack of consistency on a definition of success.

b. Recommendation

Fusion cell members need to know their mission, and this must be driven by the leadership of all stakeholders agreeing to and clearly articulating what it is they expect from the FC. An inability for FC members to articulate what “effectiveness” looks like suggests a lack of clear mission guidance. It is critical that outside leadership understand what it is they expect of a given FC and clearly relay that mission to the FC leadership. Every member of the FC must know his or her role in supporting the FC’s mission. In return for this guidance, outside leadership can expect that FC members will be able to articulate when they are or are not being effective in executing the mission.

3. Additional Considerations

a. Quality of Personnel

Provide high quality personnel to the FC: if you are not sending your best personnel to work in the fusion cell, the FC will not succeed. Low-quality personnel cannot speak on behalf of their organization in a sufficiently timely manner and will mismanage the inter-agency relationships therein.

b. Fusion Fatigue

Several interviewees also expressed witnessing what is sometimes referred to as “fusion fatigue” which takes place when a fusion cell has been in existence for a longer period of time and the personnel assigned to that cell decrease in quality as time goes on. Avoid this by continually screening and assigning only high quality personnel to fusion cells and rotating personnel to prevent burn out. Personnel with fusion cell experience in high operational tempo environments, such as Iraq or Afghanistan, end their rotations with invaluable experience and a unique interagency skill set. By rotating these personnel to lower tempo fusion cells, fusion fatigue may be avoided and the individual’s skills in the conducting interagency efforts can still be put to use. By placing experienced fusion cell members in lower-stress FCs, these locations could become the ideal setting for placement of junior analysts under the mentorship of senior and experienced FC members who are there for a respite from high tempo theaters.

c. Feedback

Provide feedback to the FC when their input leads to action/effects – with face-to-face visits whenever possible.

Fusion Cell Leadership: These suggestions are targeted at FC leaders/directors.

4. Connect Your FC with Outside Leadership

a. Discussion

Survey responses and interviews suggest that the most important element that the leader of a FC brings to the organization is the ability to access outside leadership.

b. Recommendation

As a fusion cell leader, you must develop and maintain close relationships with decision makers at the unit(s) your FC supports – they must feel constantly connected with you and your FC. You must be comfortable corresponding directly and rapidly with these decision makers when necessary, often bypassing layers of bureaucracy. If you are not able to do this, the ability of your FC to influence/create action will be diminished. Your FC members will see your lack of ability to relay information to external decision makers as a significant problem.

5. Understand Interagency Dynamics

a. Discussion

One might think that a seasoned tactical leader, intelligence officer, or law enforcement agent would be a strong FC director due to the ability to organize and lead a small group of personnel (internal), and an understanding of how their actions contribute to efforts on the battlefield or patrol (external). However, data suggests that the best quality a fusion cell leader can bring to the FC's internal efforts is an understanding and appreciation of what all interagency partners bring to the fight. In choosing FC leaders, seek out individuals with successful interagency experiences and a demeanor that is adaptable to managing the wide-array of perspectives that will be present in a fusion cell.

b. Recommendation

Fusion cell leaders must fuse a wide array of interagency perspectives. Be aware that you, as the FC director, will be entering a microcosm of interagency dynamics. You must overcome the biases and norms of your own culture and synchronize the efforts of the multiple agencies under your leadership.

6. Ensure You Have the Right Organizations Represented

a. Discussion

Having the appropriate organizations represented in the FC was identified by many survey respondents and interviewees as important to success. Key to getting the right membership is reaching an agreement with all FC supporting organizations on the mission of the FC, the criticality of the mission, and what each supporting organization will provide the FC and vice-versa. Personnel sent to the FC to represent a given organization must understand the role of the FC, understand their purpose there, and arrive with sufficient training and experience to be an asset upon arrival.

b. Recommendation

FC leadership needs to articulate a clear mission for the FC and get buy-in from all participating organizations. FC leadership must clearly state personnel requirements for the FC in terms of training, seniority, experience, and accesses. Ensure organizations contributing personnel to the FC have a good, transparent picture of what their personnel are doing in the FC and encourage parent organizations to visit and take an active interest in the FC. FCs should not be used as training tours for junior personnel – it is critical that experienced and trained individuals fill FC billets. FC leadership must identify ineffective personnel, and/or gaps that exist in collection/analysis capability due to lack of appropriate support from a given agency. FC leadership must raise these concerns and seek to remedy the gap.

7. Additional Considerations

a. Know the Interagency

The more time you've dedicated in your career to understanding the capabilities and cultures of the various interagency organizations, the better able you will be to lead the FC.

Fusion Cell Members: These suggestions are targeted at personnel assigned to work in a fusion cell.

8. Make Information Sharing the Priority

a. Discussion

The core concept of a fusion cell is to ‘fuse’ information. This requires complete sharing of all intelligence and honest exchange about each organization’s perspective/intent on a given issue. This is the ideal, but we are well aware that it will not always be met. Our research clearly showed that when critical members or organizations involved in a fusion cell do not make efforts to share information and intent, the effectiveness of the FC can significantly diminish. It is critical to note that *the reticence of even a single member* of an FC can reduce its effectiveness.

b. Recommendation

Open and honest sharing should be the norm. There are times when that will not be possible. In such cases, the individual or organization in question should be honest about the fact that they cannot share on a given topic. The worst possible combination is to not share information, and conceal the fact that one is not sharing. Such deceit can make problems exponentially worse.

9. Additional Considerations

a. Know Your Role

Arrive with an understanding of why your organization wants you in the fusion cell—know what they expect you to provide.

b. Arrive with Knowledge

Begin truly representing your agency from day one. Calling your parent organization for clarification or permission on every issue is a liaison function, not a fusion cell member function. This type of behavior will reduce the speed at which a fusion cell can synchronize information and recommendations—often a key element when solving time critical problems.

C. MACRO-POLICY: INTERAGENCY REFORM

As discussed in Chapter III, we see a direct relationship between the dynamics of a fusion cell and the entire interagency system. Therefore, we believe that the data collected at the micro-level (fusion cell) holds policy recommendations for macro-level interagency reform policy. The following offers a series of broad policy recommendations, the validity of which lies in our analysis of interagency fusion cells.

We are confident that fusion cells have demonstrated a capacity for harnessing the capabilities of multiple agencies and producing an end product that no individual organization could have produced without a collaborative effort. Fusion cells bridge the gaps that exist between various units on the battlefield, between the myriad intelligence organizations supporting CT efforts in the United States and abroad, between multiple state-level law enforcement elements, etc. A fusion cell is a unique entity with a proven track record of finding enemies who are skilled at exploiting the seams between all of these organizations.

Our primary macro-policy recommendation is to mirror the fusion cell capability at the national level—to create senior level fusion cells that would bridge the gaps between our key national organizations (DoD, Intelligence, Justice, etc.). These national level fusion cells would be populated by senior, experienced, and vetted personnel but must remain small and agile, similar to the lower level fusion cells studied herein. These national fusion cells (NFCs) would report directly to a cabinet-level advisor such as the National Security Adviser or Director of National Intelligence. Only this access to key decision makers, and the ability to directly influence the policy decisions of the president,

would draw in the appropriately talented senior leadership from all contributing agencies. NFCs would ultimately create a network of highly talented interagency partners that would provide synthesized data to national leadership in a timely manner.

Based on current security priorities, national fusion cells could be established for short or long durations. In today's environment, we see a specific purpose for both short and long-term NFCs. Long-term NFCs would synchronize interagency efforts on major standing security issues (e.g., an AF-PAK NFC, very similar to the Pakistan Afghanistan Coordination Cell created by the Joint Staff, with the ability to rapidly move information and achieve decision making). Short-term NFCs would be rapidly created and disbanded to address specific operations (e.g., a fleeting hostage rescue operation). Creation of these issue-based fusion cells would be based off requests from a host of sources - national leadership, Geographic Combatant Commanders, combat theater commanders, or individual national agencies. National fusion cells would be highly mobile. Building a standard bureaucratic fortress replete with individual offices and cubicles to house these elements would be completely self-defeating. Once assigned to an NFC, members would be constantly on the move (within D.C. or around the world).

Areas for Future Study (prioritized):

1. *Interagency legislation:* A comprehensive study of what a Goldwater-Nichols Act for the interagency would look like. This study would cover career progression and the creation of a National Fusion Center.
2. *Interagency training:* As a sub-set of interagency legislation, we recommend a study on what a career path would look like for DoD and interagency personnel once interagency rotations were considered a requirement for advancement. Should it apply to all leadership, similar to today's joint-tours? Should there be an interagency career track that is radically different than any current models?
3. *Internal fusion cell dynamics:* A study of best practices inside a fusion cell. This study would include leadership style, physical design, and battle rhythm to name a few. The intent would be to provide a practical document for FC leaders and members.

4. *Fusion cell mission*: A study of the best practices for providing a mission statement to fusion cells. As shown in this study, the concept of “effectiveness” varied greatly between FCs, in large part, we argued, because of a lack of clear guidance. What lessons can be learned and passed on from those FCs that truly understand their mission?
5. *Sub-group samples*: Our findings resulted in discrepancies between the total sample and the sub-groups: why do the DoD, State and Local, and OGA sub-models have regression results with p values >0.10 ? A significant contributor to this finding may simply lie in the fact that our research is drawn from small sample sizes in the sub-groups, but we still believe the finding is worth further consideration. What factors, issues, and/or model traits can possibly explain why the overall model results are statistically significant, but that specific sub-model results are not? From our professional experience, in-depth interviews, and descriptive statistics in our analysis of this topic we present below possible explanations. Given a lack of further survey data at this time, the speculation below can serve as a start point for FC leadership to examine these areas in order to better understand the internal dynamics of their own FC.
 - a. *OGA sample results*: Why are membership and access not statistically significant? Analyzing the survey responses to these variables suggests that there is a wide range of responses for OGA respondents to these two specific variables. This could indicate that OGA respondents are either more sensitive to these variables or specific agencies within the OGA subset view them differently. In either case, all of the OGA responses deserve further study to tease out more nuanced explanations and findings.
 - b. *DoD sample results*: Why is access to decision makers the only IV to achieve statistical significance in relation to FC effectiveness? This may suggest that DoD respondents either take the other variables for granted or that access is so important that the other four are inconsequential. The negative coefficient for empowerment is not significant; however, if this finding were supported by additional data, what might be the explanation?

It could be that some DoD personnel dislike a relatively more free form, flowing organizational design than they are familiar with. This dislike would arise from working in an environment foreign to someone familiar with an environment in which rank, duty, and occupational specialties define the proscribed boundaries. Another possible explanation could be that FC members become “part of the team” and identify with the FC vice their parent organization. Thus, they do not feel it is important to be empowered by their parent organization while serving on the FC.

- c. *State and Local sample results:* A possible explanation for why all of the independent variables were not significantly related to the dependent variable is the wide differentiation present in this data set. The 72 State and Local FCs receive orders and guidance from disparate organizations and leadership, are at differing stages of development, and have differing methodologies. Thus, State and Local respondents may not have as much in common with their cohort as DoD or OGA. This is an important question requiring additional research.

What then is occurring on State and Local FCs? We believe there may be several unique characteristics of State and Local FCs that could emerge in future research. First, decision-making process and information flow came the closest to being statistically significant ($p = 0.12$). State and Local FCs have had and continue to have difficulties communicating between themselves and with DHS or DoD computer systems. Thus, State and Local respondents would most likely place a premium on information sharing. State and Local FCs also generally have few barriers between themselves and decision makers; they answer to a governor, mayor, or to a judge for a legal action. Access, for State and Local FCs, may be more straightforward than for the larger, more bureaucratized DoD and OGA. State and Local FCs have, in most cases, all received or expect to receive assistance from DHS (personnel or technical). Thus, we would expect the importance of having the right membership to be related to effectiveness. Our team has seen two patterns in State and Local FCs that we believe warrant future

study, as our sample size was not large enough to provide definitive results: (1) FC leaders are usually appointed, sometimes political appointees, with little experience and (2) a leadership training deficit among State and Local law enforcement.

D. CONCLUSION

As clearly shown throughout this study, the focused analysis of fusion cell effectiveness is in its infancy. What today's problem sets have consistently shown is the need for a new paradigm. The models and institutions put in place at the end of World War II served an invaluable purpose, and still have many great capabilities that can be brought to bear against today's threats. The problem that we are just beginning to understand, however, is how to effectively synchronize the best capabilities of these national organizations against an enemy who exists outside of the nation-state system. We believe that interagency fusion cells are a micro example of how this can be done.

The fusion cells in this study are, in simplest terms, hubs in an interagency network. When properly manned, resourced, and utilized they tie together the best insights and capabilities of the major national level organizations. The extremist enemies facing the United States today are also a network. They are a network of non-state actors tied together by a radical and violent anti-Western, anti-modernization agenda. Put quite simply, we would offer the now oft heard refrain that 'it takes a network to defeat a network.' Though still small and evolving, fusion cells are the best example in today's fight of how to effectively conduct the counter-network warfare that is required to defeat today's enemies.

APPENDIX A. STATISTICAL ANALYSIS

A. REGRESSION ANALYSIS

As mentioned in Chapter V, we first analyzed the data to designate a proxy dependent variable. We chose four questions from the survey that potentially offered the best representation for Fusion Cell (FC) effectiveness. Those results are below. As the analysis demonstrates, question 46 offers the best statistical match for a proxy dependent variable (DV4). The source for all of the regression analysis is StataCorp. 2007, *Stata Statistical Software: Release 10*. College Station, TX: StataCorp LP.

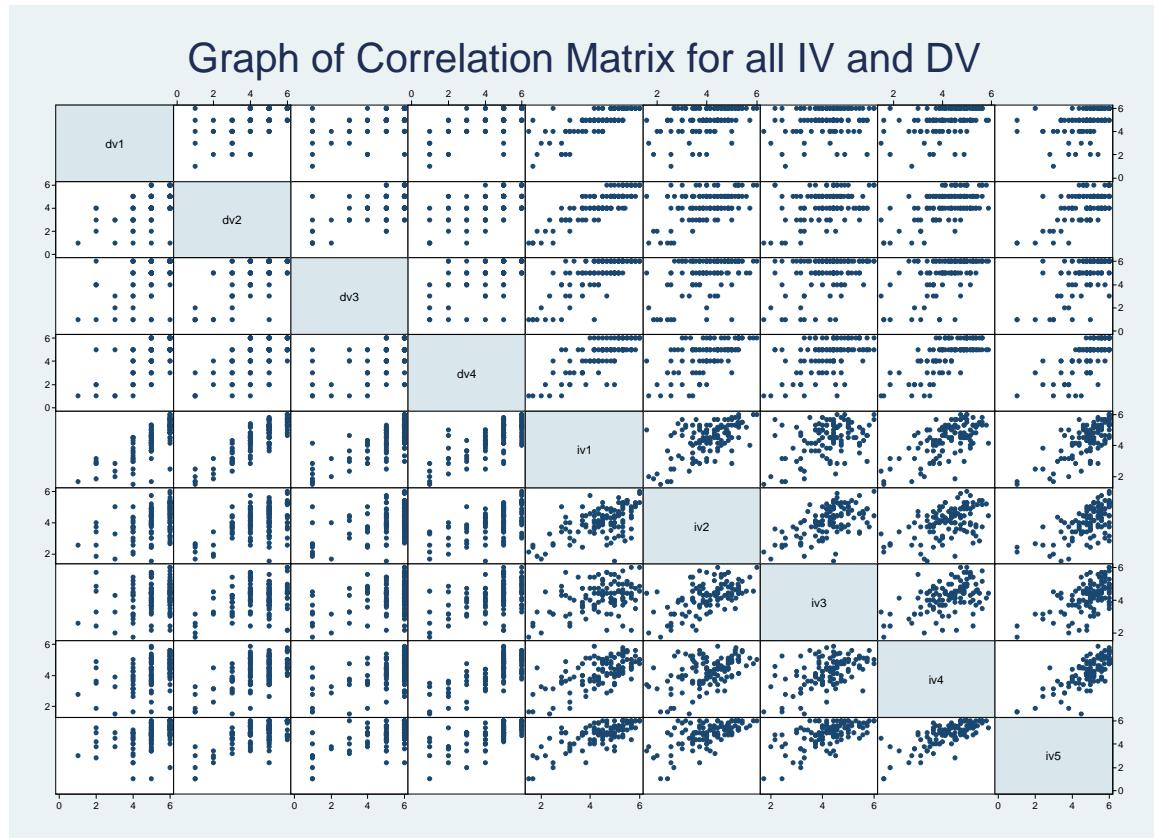


Figure 1. Correlation Matrix Graph for all IV and DV

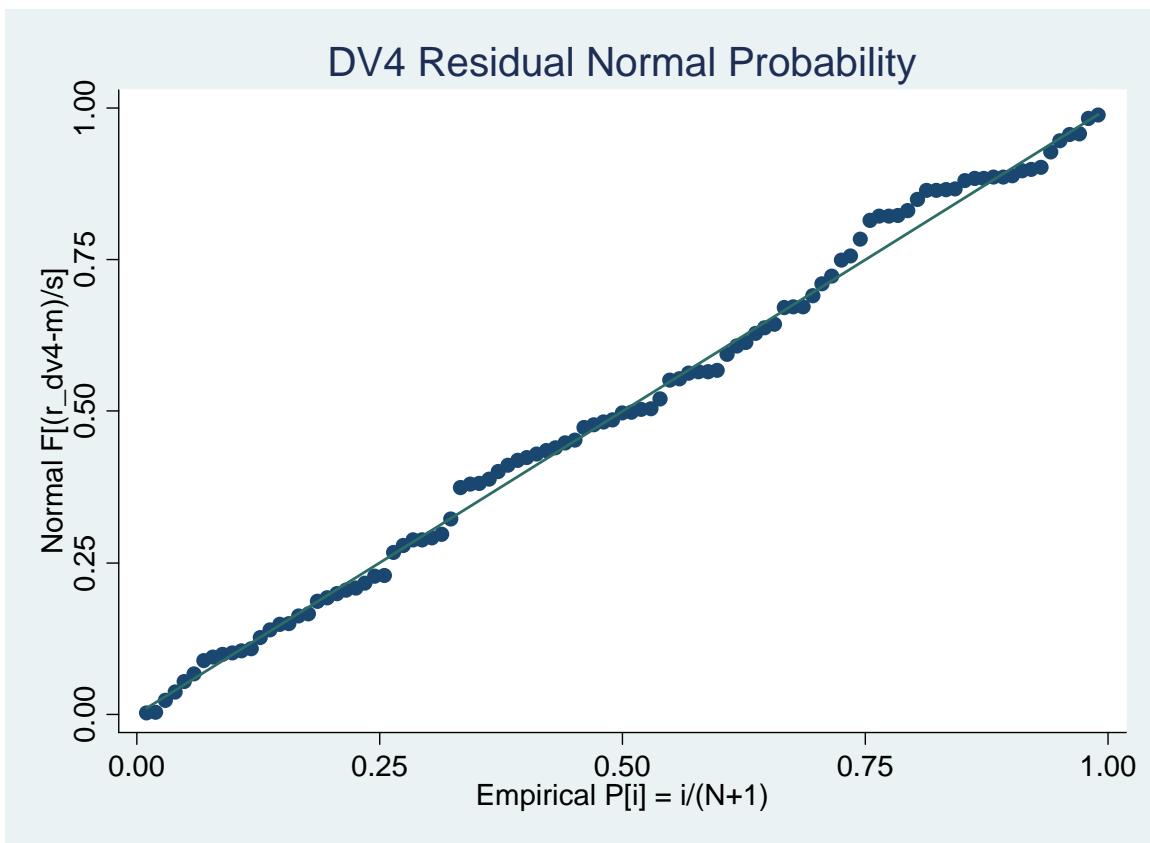


Figure 2. DV4 Residual Normal Probability

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regress dv110 iv1 iv2 iv3 iv4 iv5
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Source	SS	df	MS	Number of obs	= 113
Model	84.3604946	5	16.8720989	F(5, 107)	= 35.18
Residual	51.3209213	107	.479634779	Prob > F	= 0.0000
Total	135.681416	112	1.21144121	R-squared	= 0.6218
				Adj R-squared	= 0.6041
				Root MSE	= .69256

dv110	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
iv1	.9213512	.0961449	9.58	0.000	.730755 1.111947
iv2	.1018141	.0967222	1.05	0.295	-.0899264 .2935547
iv3	-.0953371	.0961573	-0.99	0.324	-.2859577 .0952834
iv4	.0260479	.1095271	0.24	0.812	-.1910769 .2431726
iv5	-.2239488	.1206162	-1.86	0.066	-.4630564 .0151588
_cons	1.924971	.3642282	5.29	0.000	1.202931 2.647011

Figure 3. DV1 Regression center all figures on the pages.

. regress dv211 iv1 iv2 iv3 iv4 iv5

Source	SS	df	MS	Number of obs = 112 F(5, 106) = 61.83 Prob > F = 0.0000 R-squared = 0.7447 Adj R-squared = 0.7326 Root MSE = .63502		
Model	124.674702	5	24.9349403			
Residual	42.7449413	106	.403254163			
Total	167.419643	111	1.50828507			
dv211	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
iv1	.9904064	.0900633	11.00	0.000	.8118471	1.168966
iv2	.0138351	.0887326	0.16	0.876	-.1620859	.1897562
iv3	-.0947658	.0894562	-1.06	0.292	-.2721214	.0825899
iv4	.0002543	.1010233	0.00	0.998	-.2000342	.2005428
iv5	.0456134	.1106005	0.41	0.681	-.1736629	.2648897
_cons	.0569694	.3343298	0.17	0.865	-.6058719	.7198107

Figure 4. DV2 Regression

. regress dv314 iv1 iv2 iv3 iv4 iv5

Source	SS	df	MS	Number of obs = 111 F(5, 105) = 31.53 Prob > F = 0.0000 R-squared = 0.6003 Adj R-squared = 0.5812 Root MSE = .94181		
Model	139.855257	5	27.9710514			
Residual	93.135734	105	.88700699			
Total	232.990991	110	2.11809992			
dv314	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
iv1	.8761985	.1312251	6.68	0.000	.6160034	1.136394
iv2	-.0909653	.1353251	-0.67	0.503	-.35929	.1773594
iv3	.0950949	.1310146	0.73	0.470	-.1646828	.3548726
iv4	.0467862	.1496486	0.31	0.755	-.2499393	.3435117
iv5	.2121382	.1659008	1.28	0.204	-.1168125	.5410889
_cons	-.1183148	.4970981	-0.24	0.812	-1.103968	.867339

Figure 5. DV3 Regression

. regress dv446 iv1 iv2 iv3 iv4 iv5

Source	SS	df	MS	Number of obs = 101 F(5, 95) = 39.59 Prob > F = 0.0000 R-squared = 0.6757 Adj R-squared = 0.6587 Root MSE = .79946		
Model	126.52929	5	25.3058581			
Residual	60.7182344	95	.63913931			
Total	187.247525	100	1.87247525			
dv446	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
iv1	.5170667	.117363	4.41	0.000	.2840717	.7500617
iv2	.1830965	.1166179	1.57	0.120	-.0484193	.4146123
iv3	.0698606	.1136445	0.61	0.540	-.1557522	.2954734
iv4	.4756956	.1367503	3.48	0.001	.2042119	.7471793
iv5	.0971003	.1521514	0.64	0.525	-.2049585	.399159
_cons	-1.342649	.4532145	-2.96	0.004	-2.242393	-.4429041

Figure 6. DV4 Regression

B. REGRESSION TESTS

We used a variety of tests in order to determine the validity of our proxy dependent variable regression. In order to test collinearity we analyzed the mean variance inflation factor (VIF). Our residual analysis involved examining kernel density and pnorm graphs for systemic patterns. We also used the Breusch-Pagan test to check for the homogeneity of variance of the residuals. To test for model specificity and omitted variables, we used the Ramsey retest. All tests confirmed the statistical validity of our model. Presented below are the test results for the overall model, DoD, State and Local, and OGA.

vif

variable	VIF	1/VIF
iv5	3.42	0.292562
iv4	2.62	0.381198
iv1	2.28	0.437963
iv2	1.91	0.524094
iv3	1.76	0.568458
Mean VIF	2.40	

Figure 7. Variance Inflation Factor for DV4 Regression

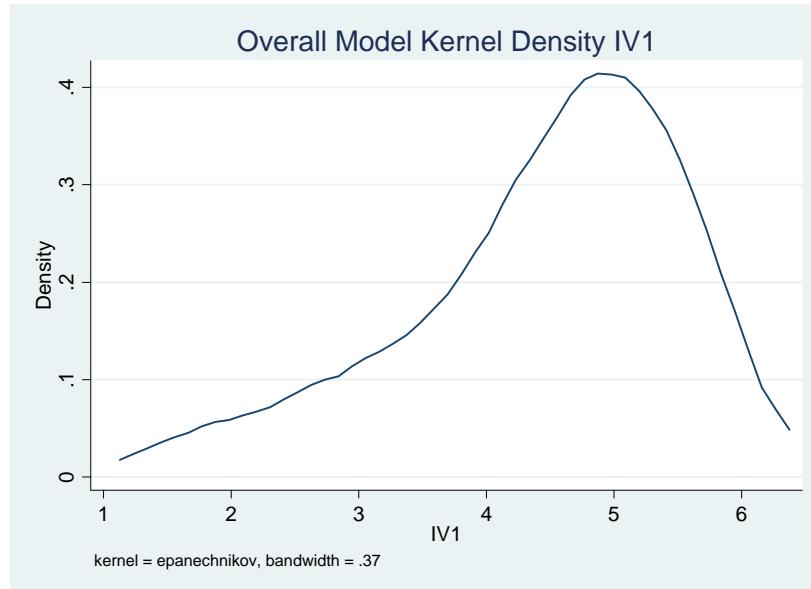


Figure 8. Kernal Densities for Overall Model IV1

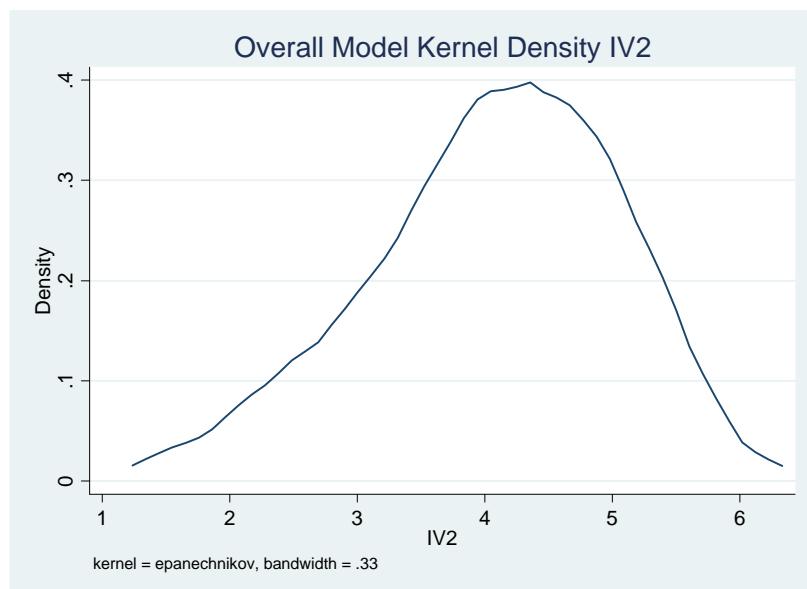


Figure 9. Kernal Densities for Overall Model IV2

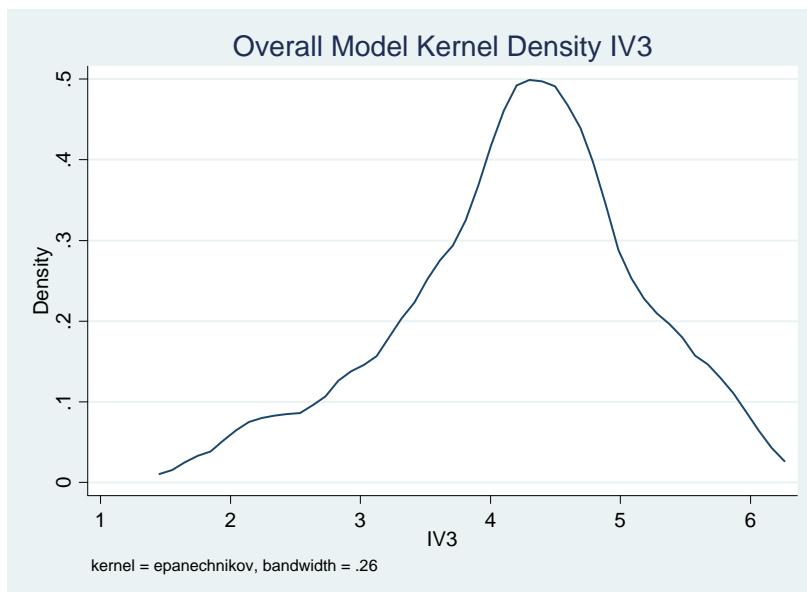


Figure 10. Kernal Densities for Overall Model IV3

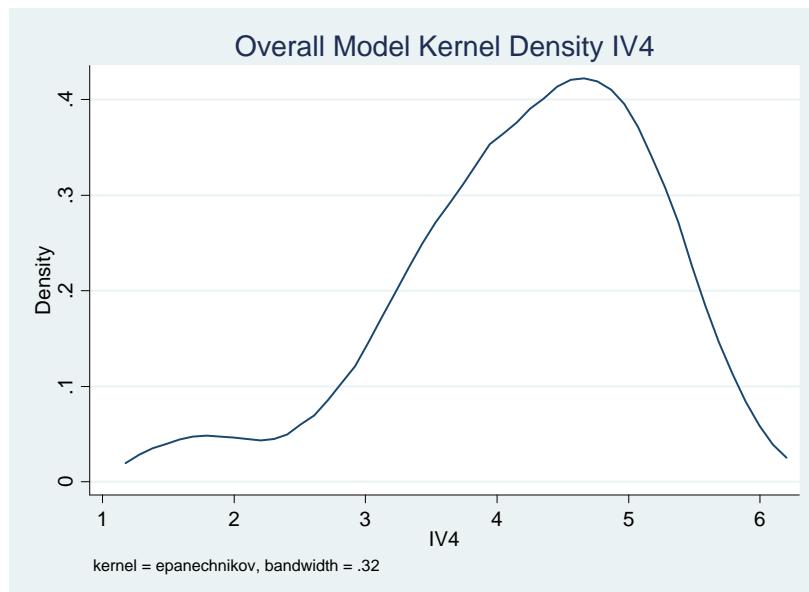


Figure 11. Kernel Densities for Overall Model IV4

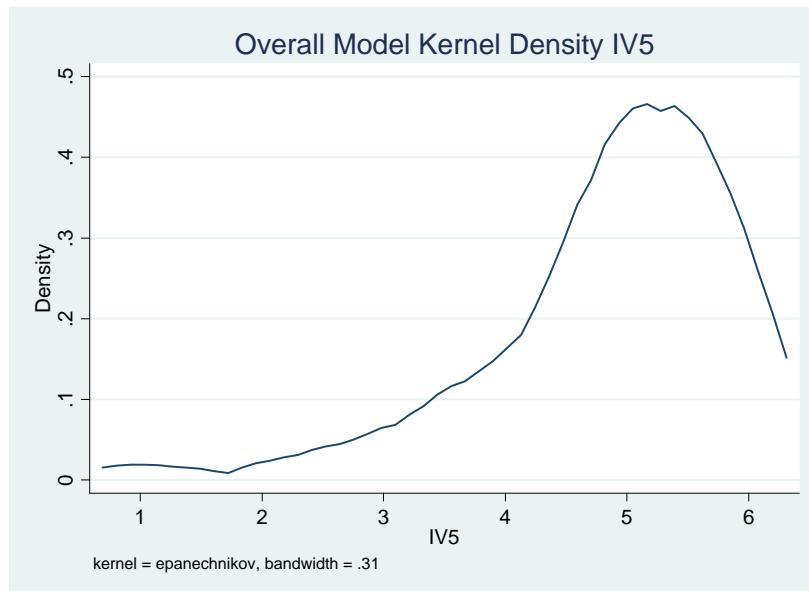


Figure 12. Kernel Densities for Overall Model IV5

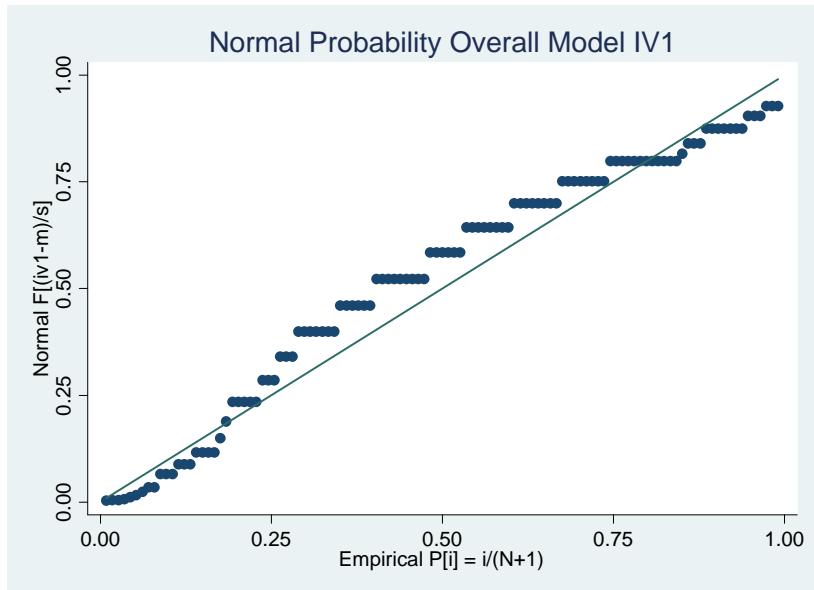


Figure 13. Probability Norm for Overall Model IV1

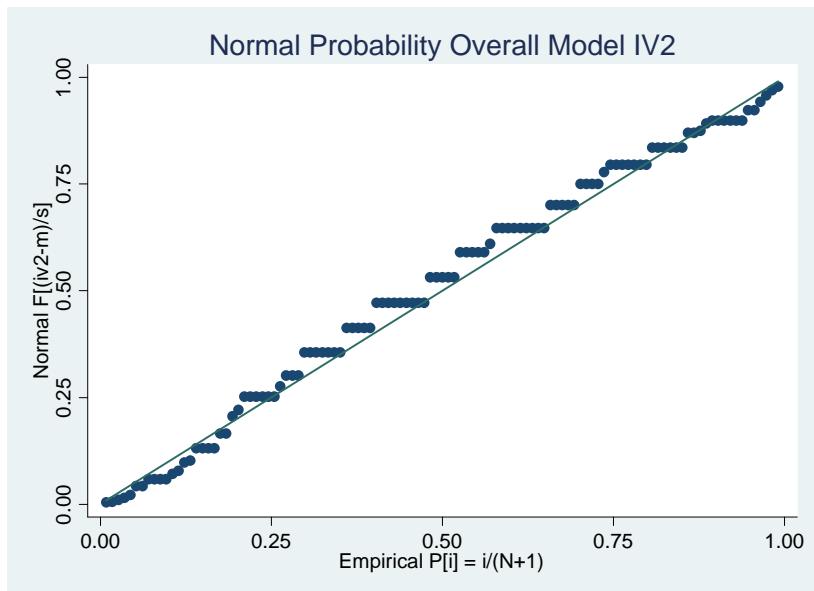


Figure 14. Probability Norm for Overall Model IV2

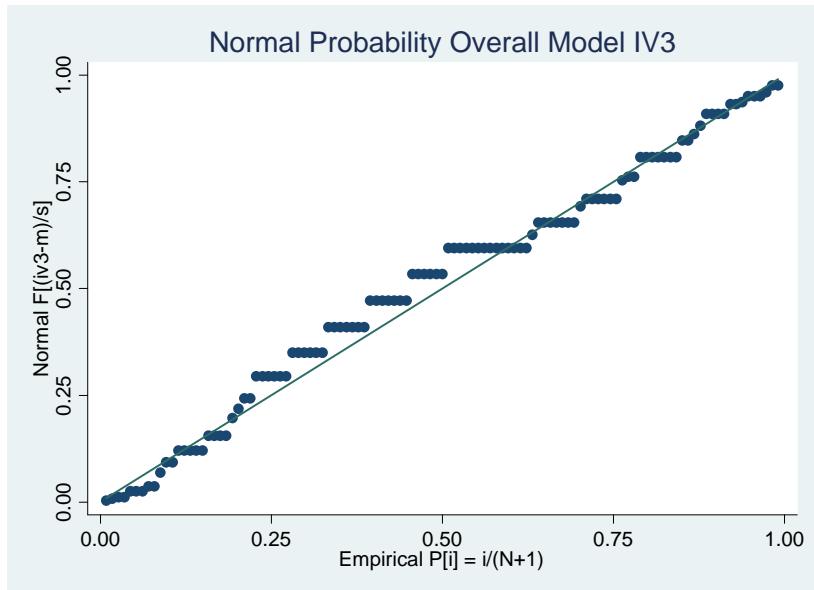


Figure 15. Probability Norm for Overall Model IV3

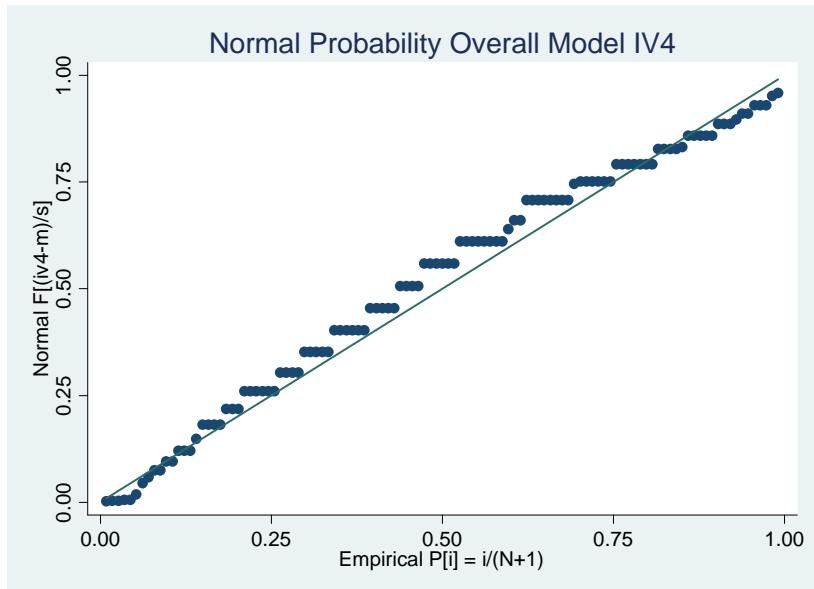


Figure 16. Probability Norm for Overall Model IV4

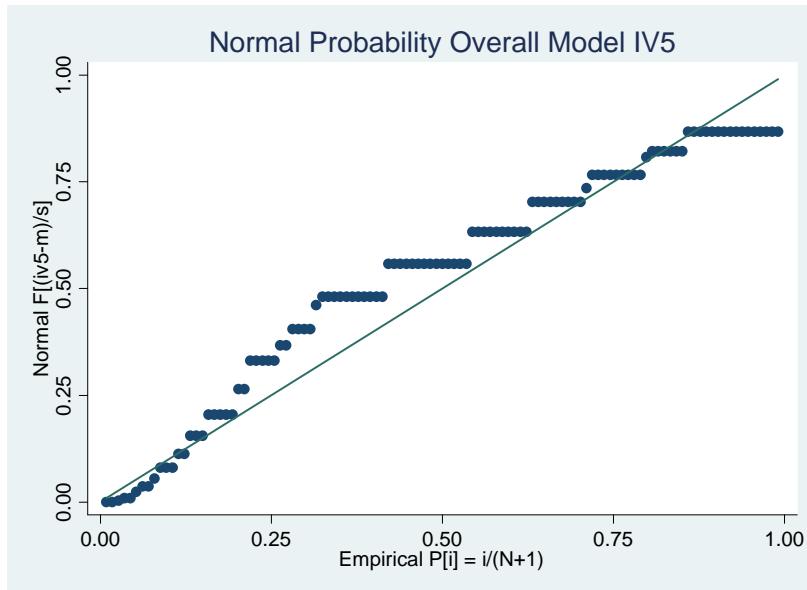


Figure 17. Probability Norm for Overall Model IV5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of dv446

chi2(1) = 7.17
Prob > chi2 = 0.0074

Figure 18. Breusch-Pagan Test for Overall Model

Ramsey RESET test using powers of the fitted values of dv446

Ho: model has no omitted variables
F(3, 92) = 2.32
Prob > F = 0.0808

Figure 19. Ramsey Test for Overall Model

. vif

Variable	VIF	1/VIF
i v5	4.10	0.243866
i v4	3.45	0.289570
i v1	3.02	0.331322
i v2	2.17	0.460647
i v3	1.79	0.558745
Mean VIF	2.91	

Figure 20. Variance Inflation Factor for DoD Model

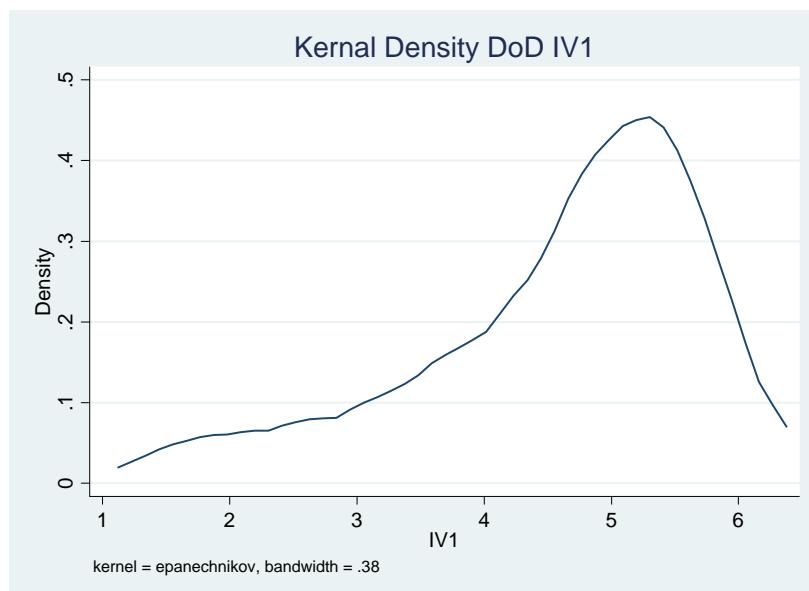


Figure 21. Kernel Densities for DoD Model IV1

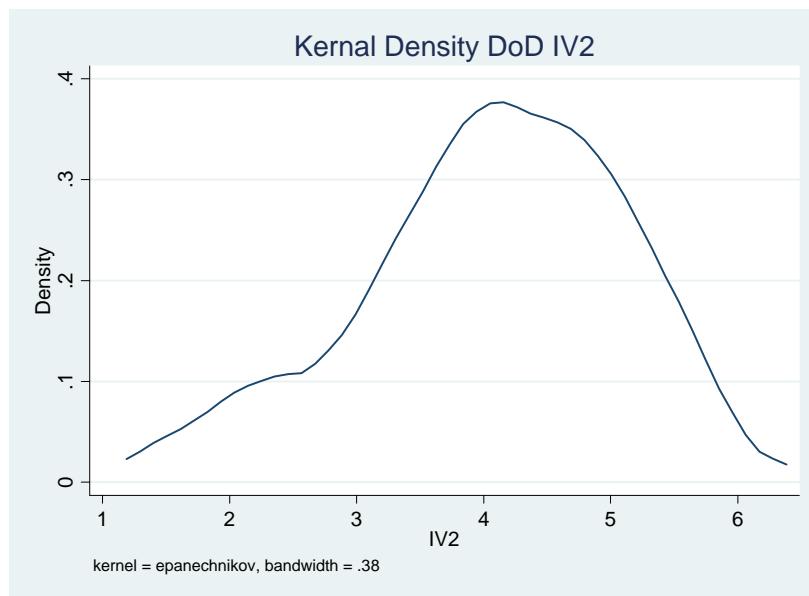


Figure 22. Kernel Densities for DoD Model IV2

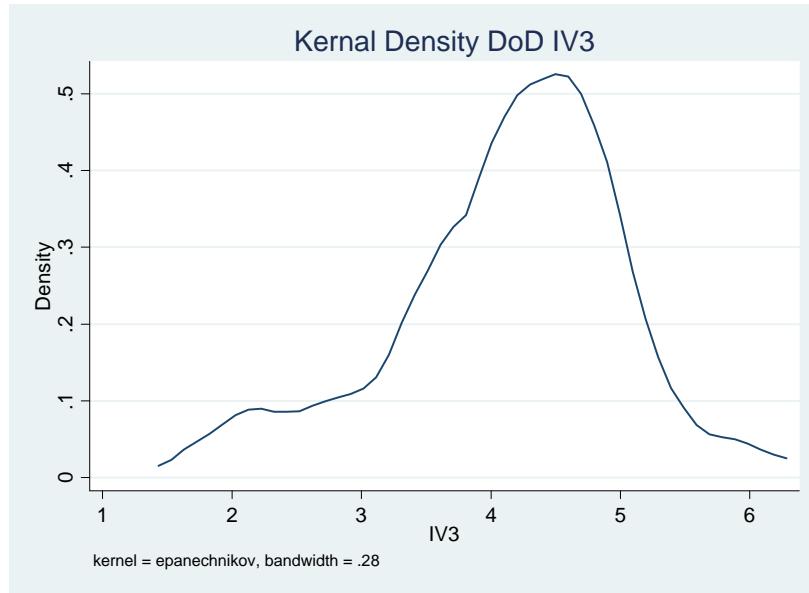


Figure 23. Kernel Densities for DoD Model IV3

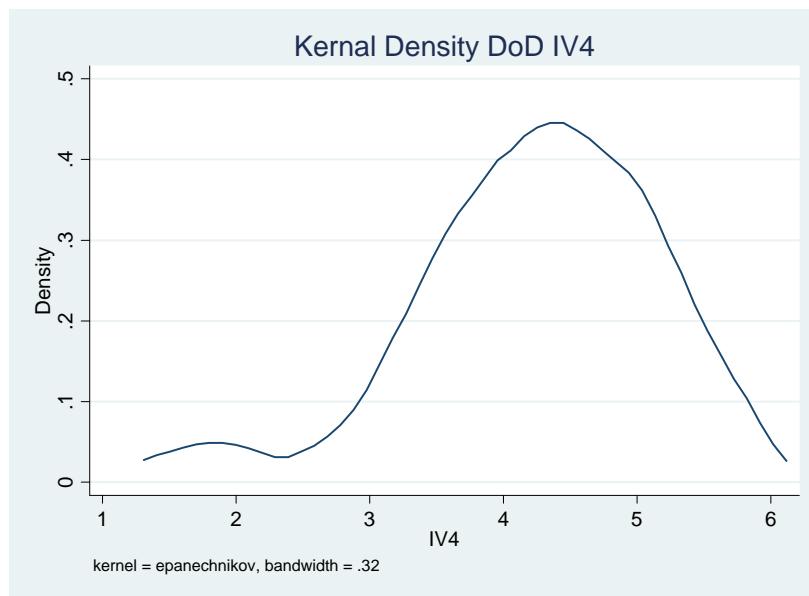


Figure 24. Kernel Densities for DoD Model IV4

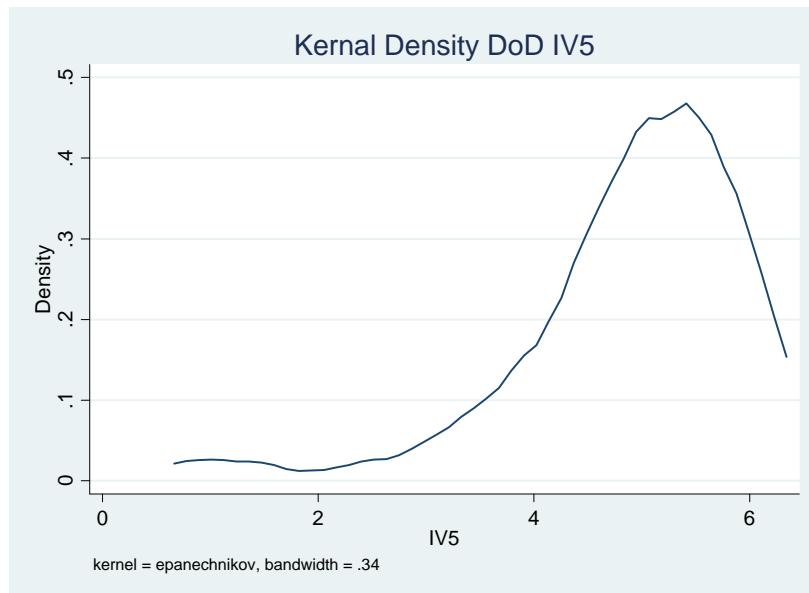


Figure 25. Kernel Densities for DoD Model IV5

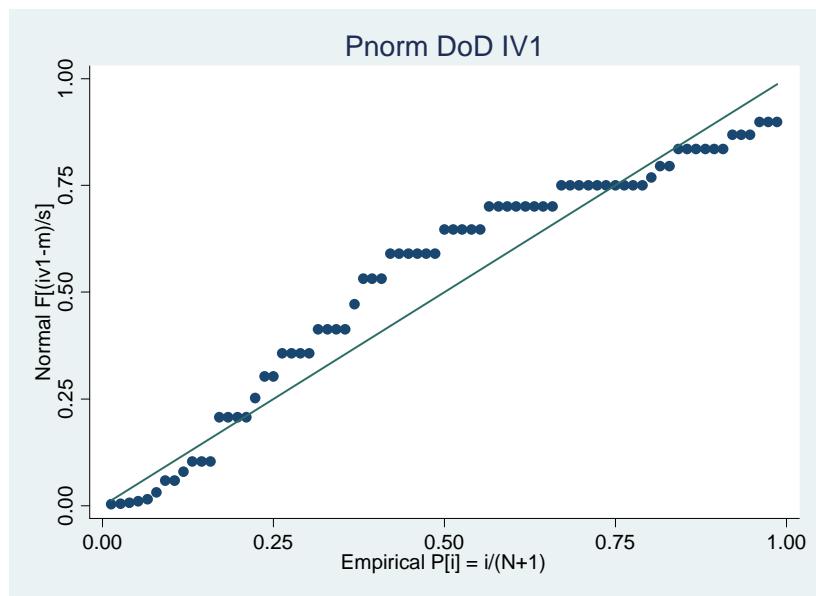


Figure 26. Probability Norm for DoD Model IV1

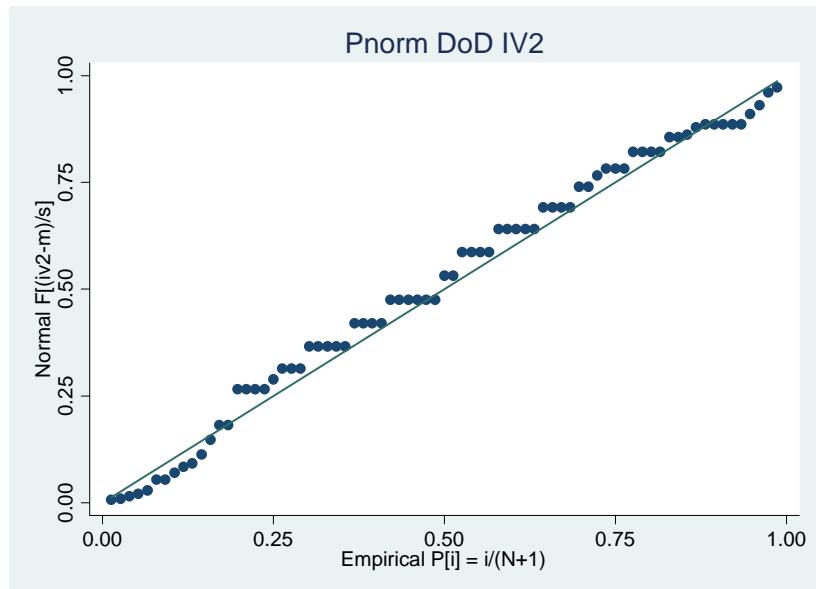


Figure 27. Probability Norm for DoD Model IV2

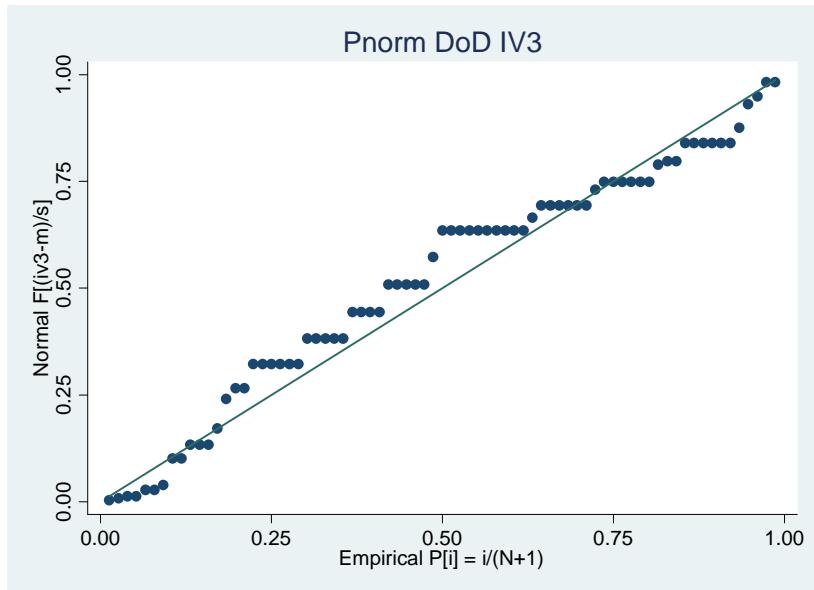


Figure 28. Probability Norm for DoD Model IV3

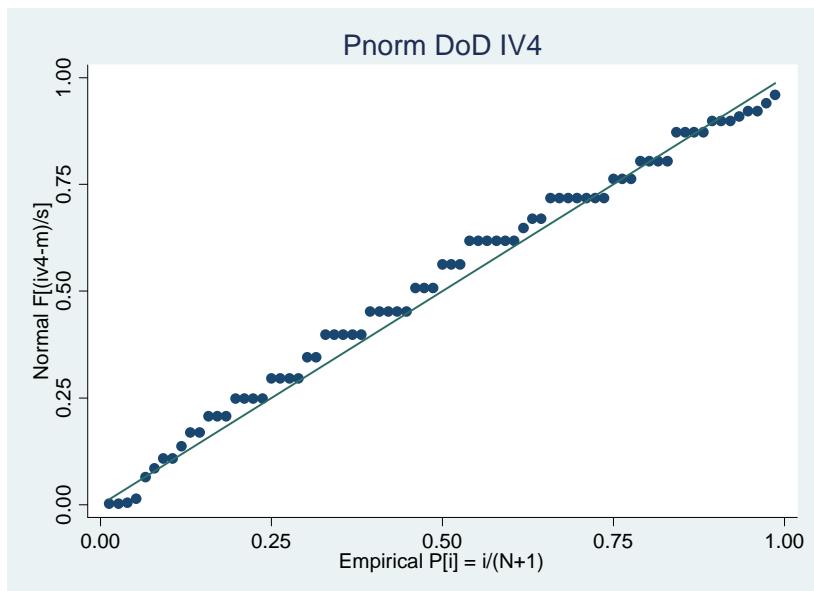


Figure 29. Probability Norm for DoD Model IV4

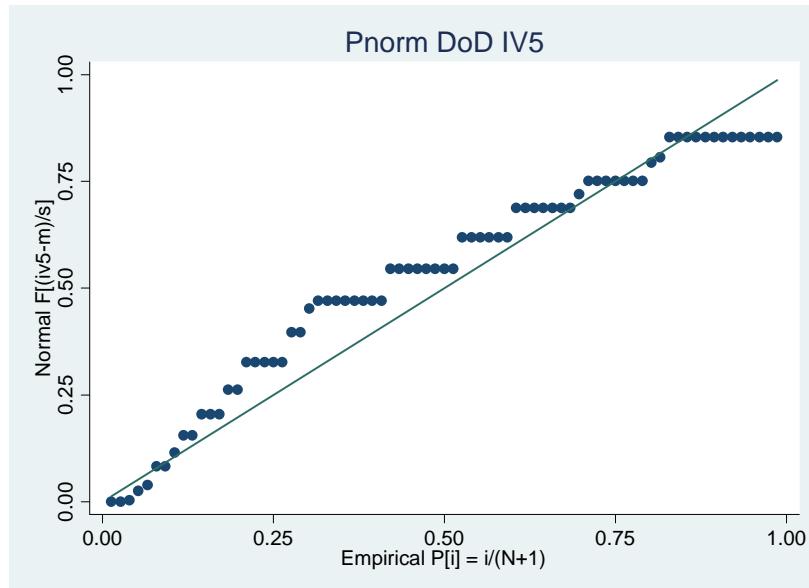


Figure 30. Probability Norm for DoD Model IV5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of dv446

chi 2(1) = 1.30
Prob > chi 2 = 0.2546

Figure 31. Breusch-Pagan Test for DoD Model

Ramsey RESET test using powers of the fitted values of dv446
Ho: model has no omitted variables
F(3, 58) = 0.64
Prob > F = 0.5907

Figure 32. Ramsey Test for DoD Model

Variable	VIF	1/VIF
i v4	5.00	0.199880
i v5	4.41	0.226658
i v3	4.33	0.230794
i v1	4.17	0.239957
i v2	2.37	0.421962
Mean VIF	4.06	

Figure 33. Variance Inflation Factor Test for State and Local Model

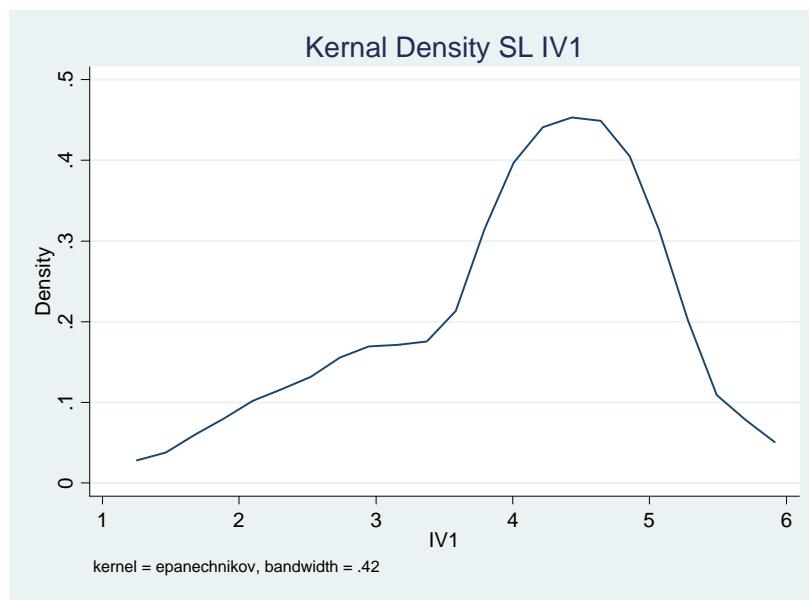


Figure 34. Kernel Density for State and Local Model IV1

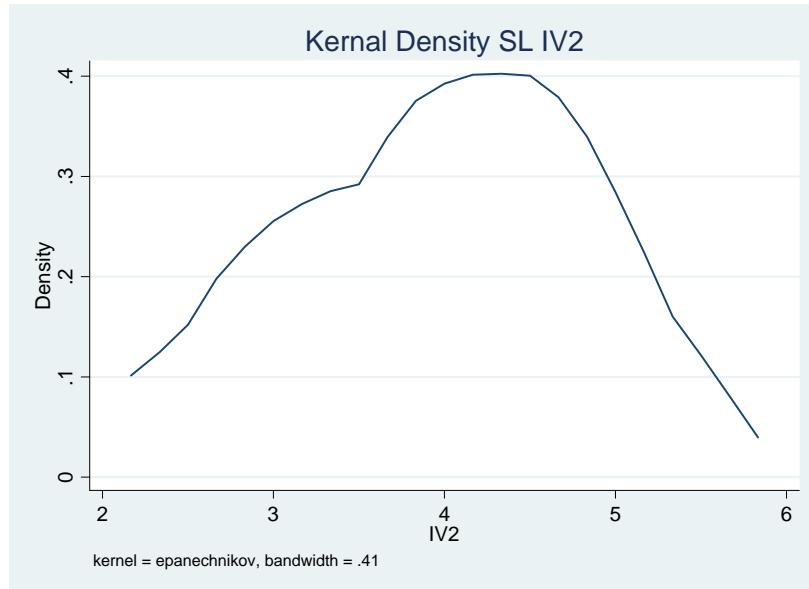


Figure 35. Kernel Density for State and Local Model IV2

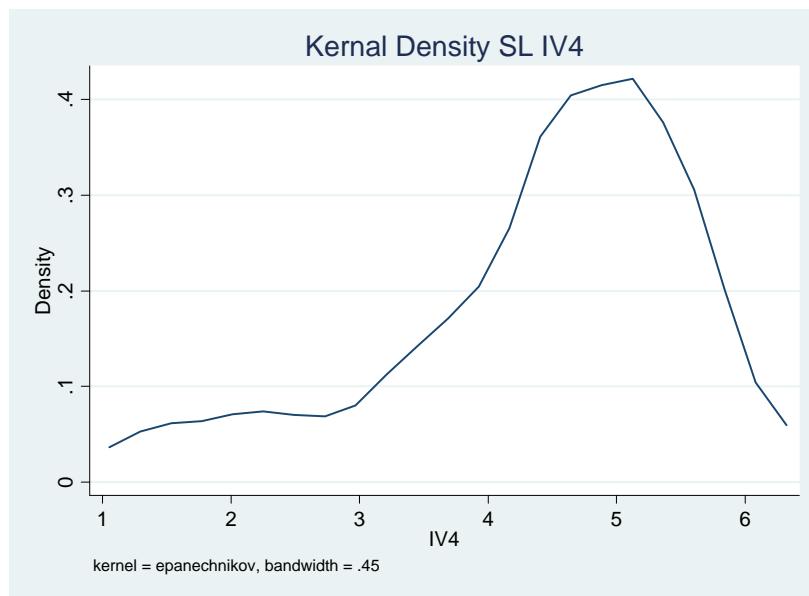


Figure 36. Kernel Density for State and Local Model IV3

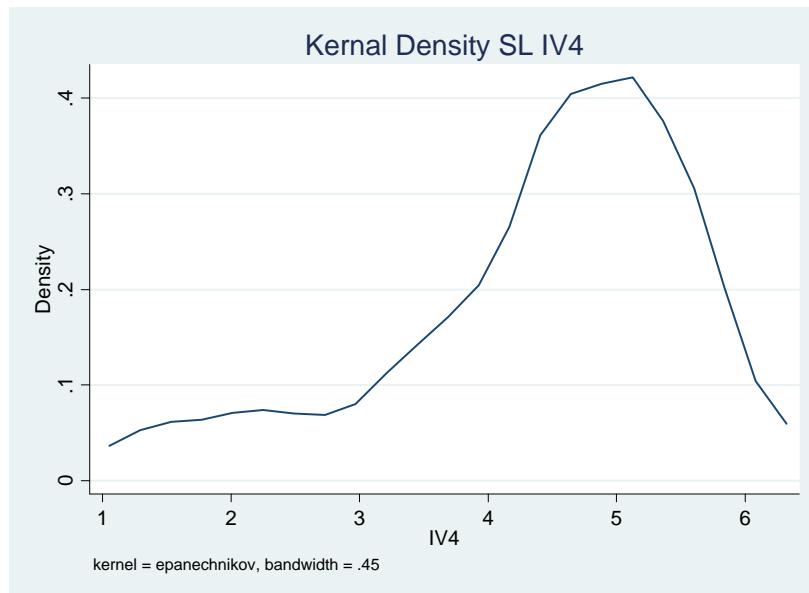


Figure 37. Kernel Density for State and Local Model IV4

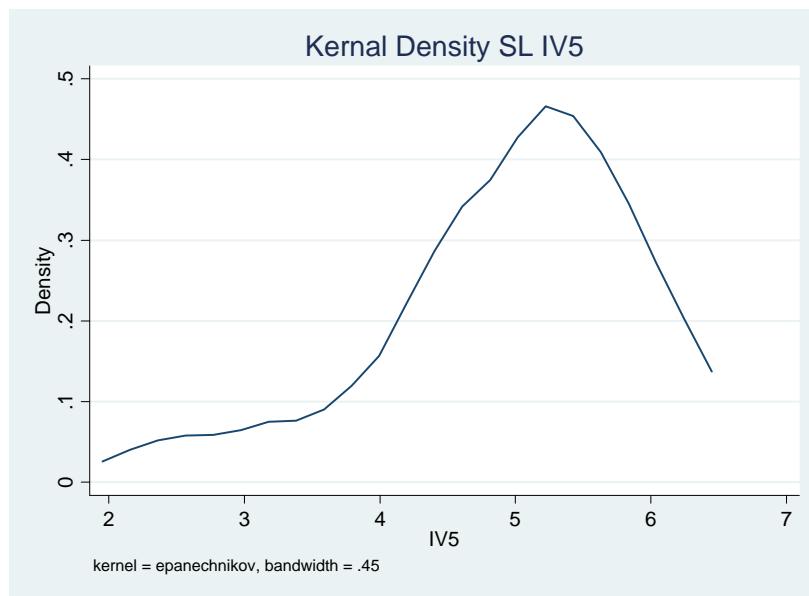


Figure 38. Kernel Density for State and Local Model IV5

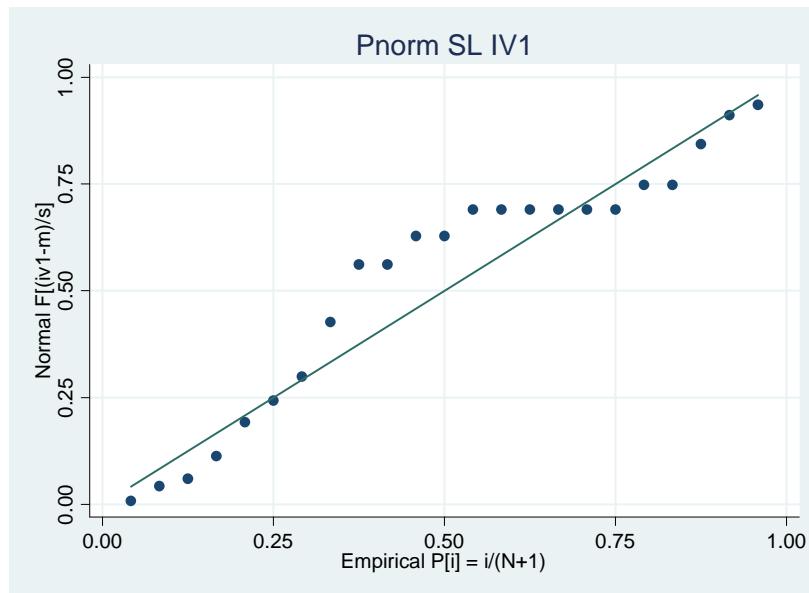


Figure 39. Probability Norm for State and Local Model IV1

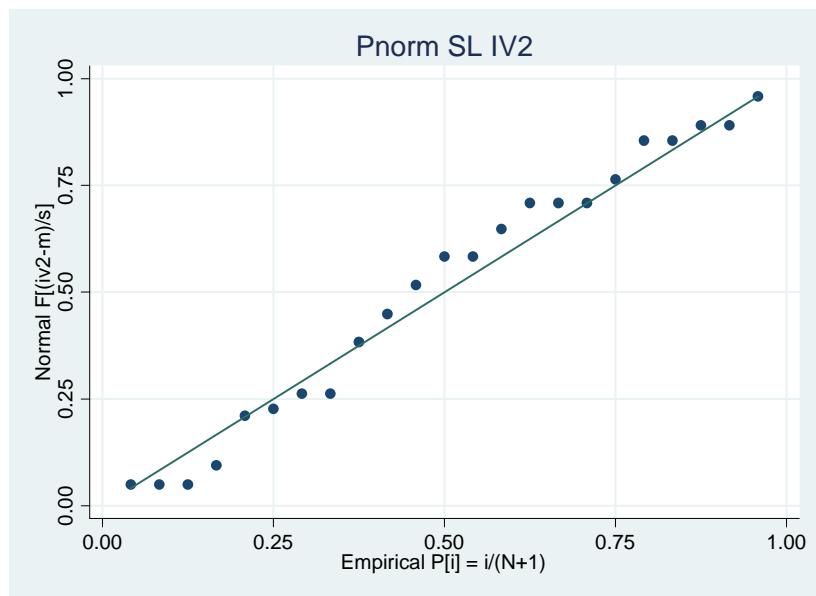


Figure 40. Probability Norm for State and Local Model IV2

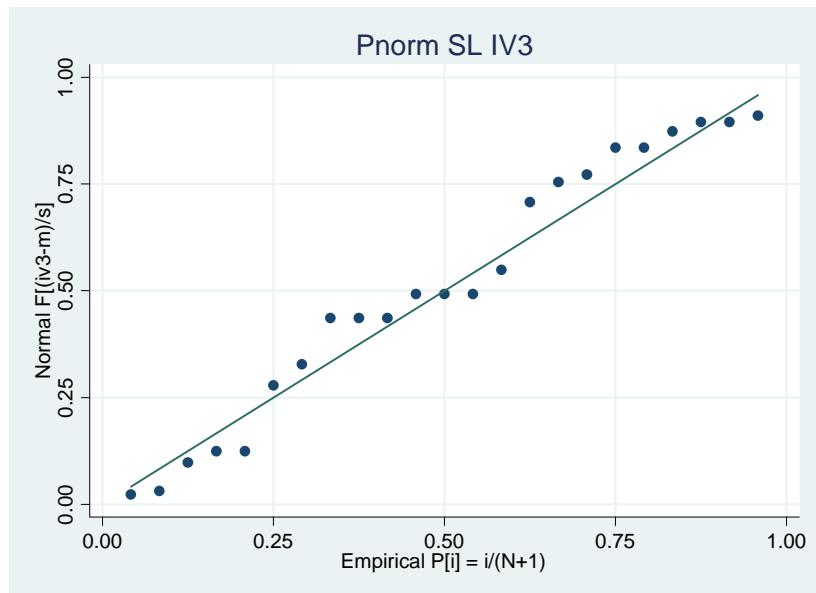


Figure 41. Probability Norm for State and Local Model IV3

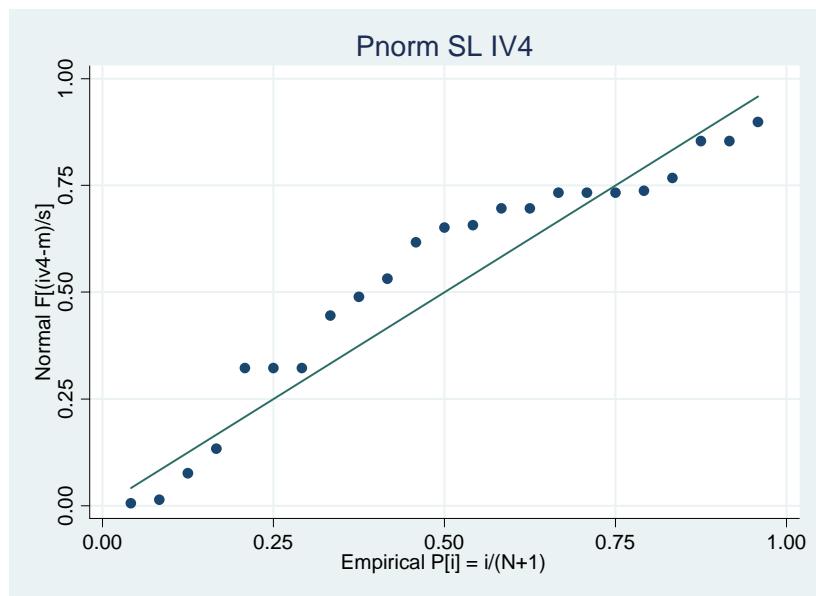


Figure 42. Probability Norm for State and Local Model IV4

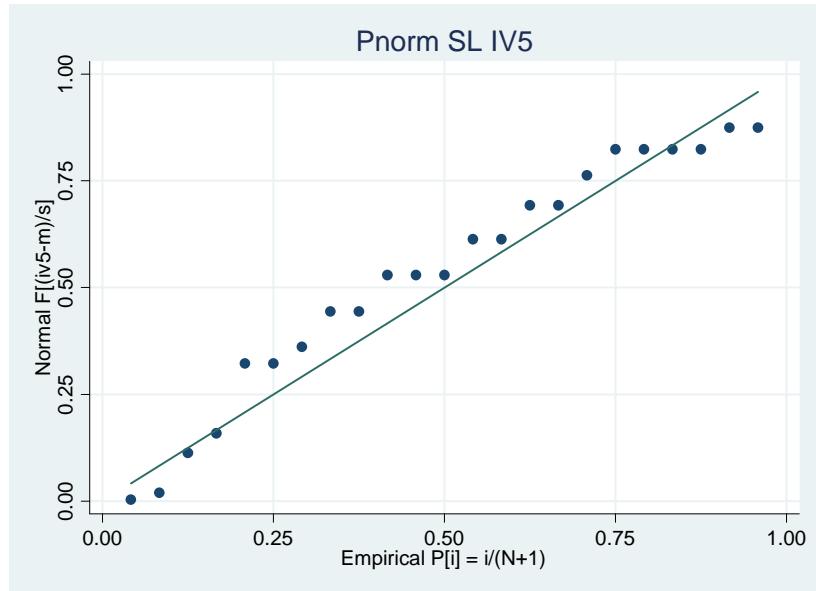


Figure 43. Probability Norm for State and Local Model IV5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of dv446

chi 2(1)	=	1.46
Prob > chi 2	=	0.2274

Figure 44. Breusch-Pagan Test for State and Local Model

Ramsey RESET test using powers of the fitted values of dv446
Ho: model has no omitted variables

F(3, 12) =	4.59
Prob > F =	0.0231

Figure 45. Ramsey Test for State and Local Model

Variable	VIF	1/VIF
i v4	5.95	0.167929
i v5	5.39	0.185669
i v3	4.80	0.208415
i v2	2.54	0.394436
i v1	2.22	0.450219
Mean VIF	4.18	

Figure 46. Variance Inflation Factor for OGA Model

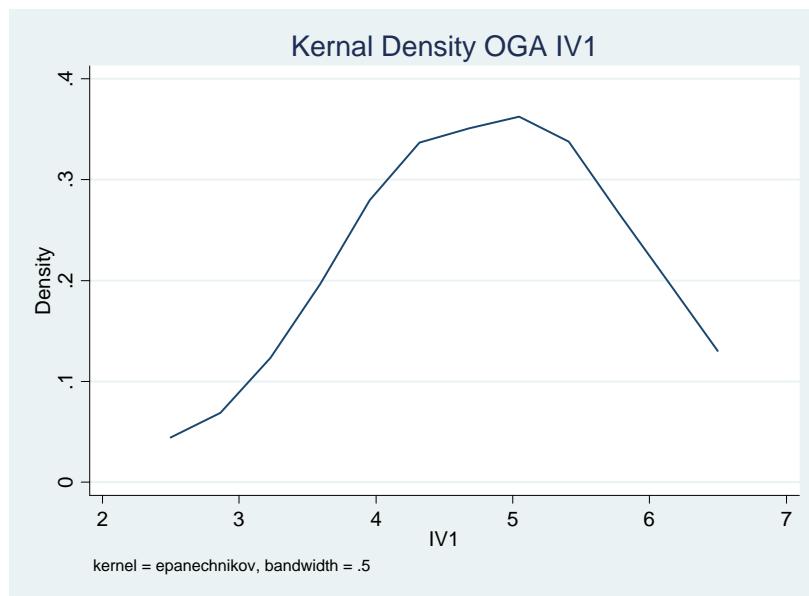


Figure 47. Kernel Density for OGA Model IV1

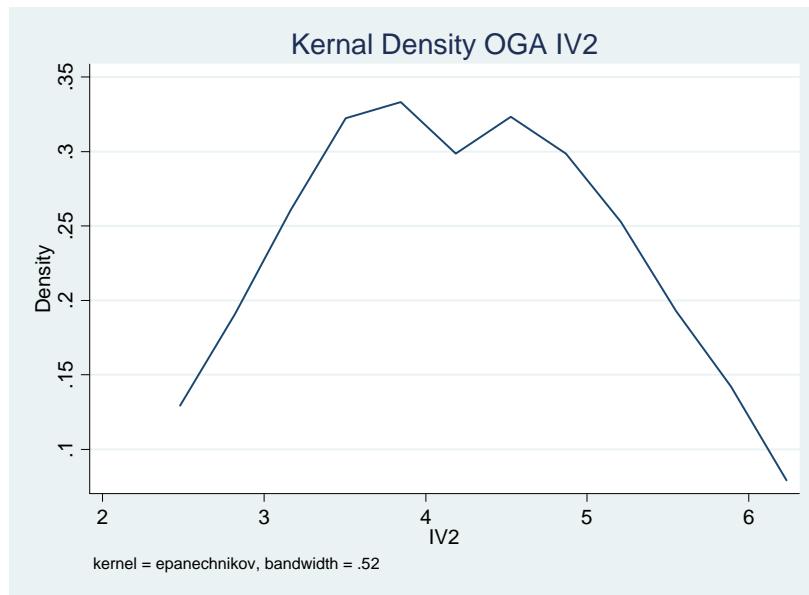


Figure 48. Kernel Density for OGA Model IV2

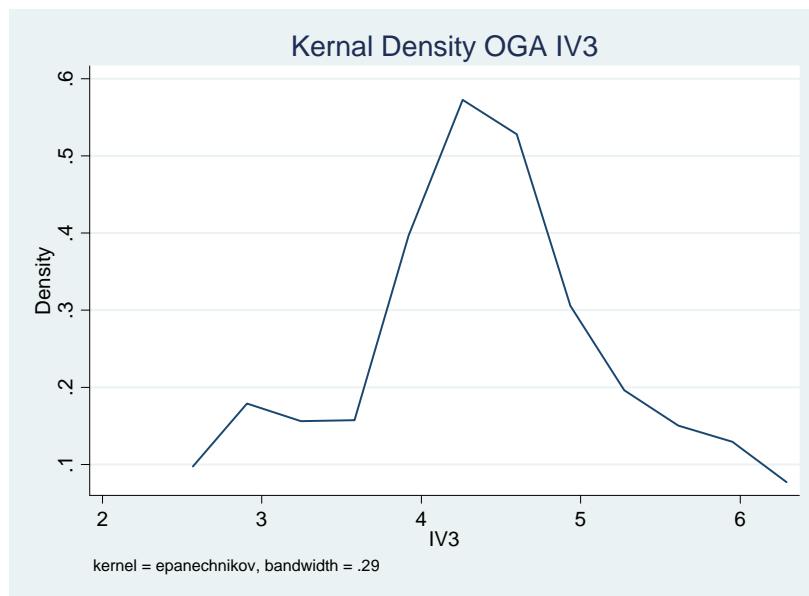


Figure 49. Kernel Density for OGA Model IV3

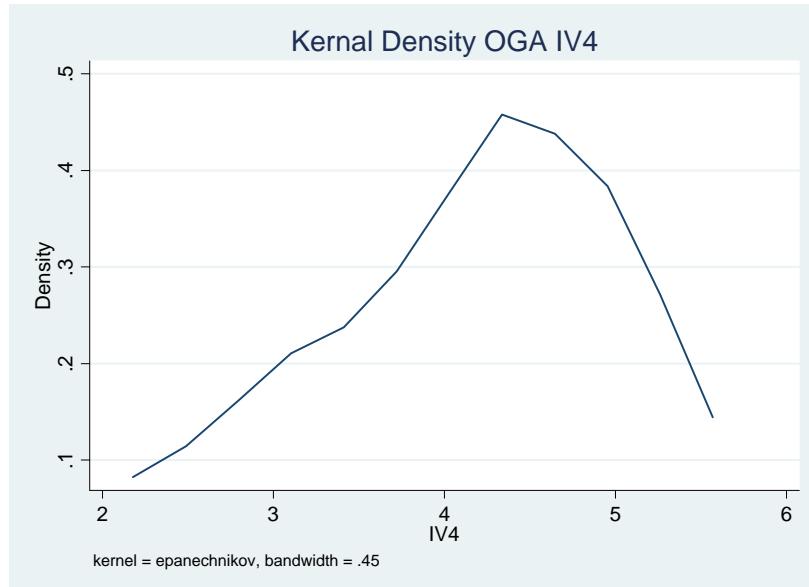


Figure 50. Kernel Density for OGA Model IV4

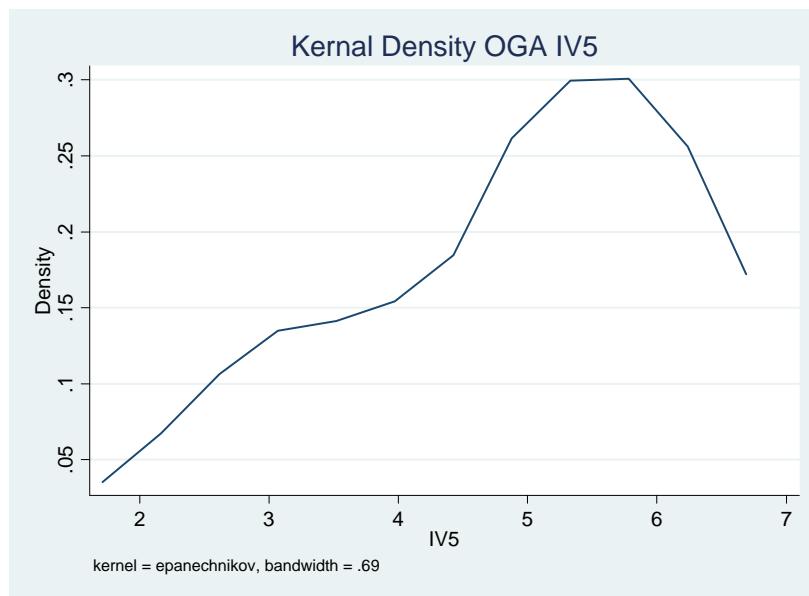


Figure 51. Kernel Density for OGA Model IV5

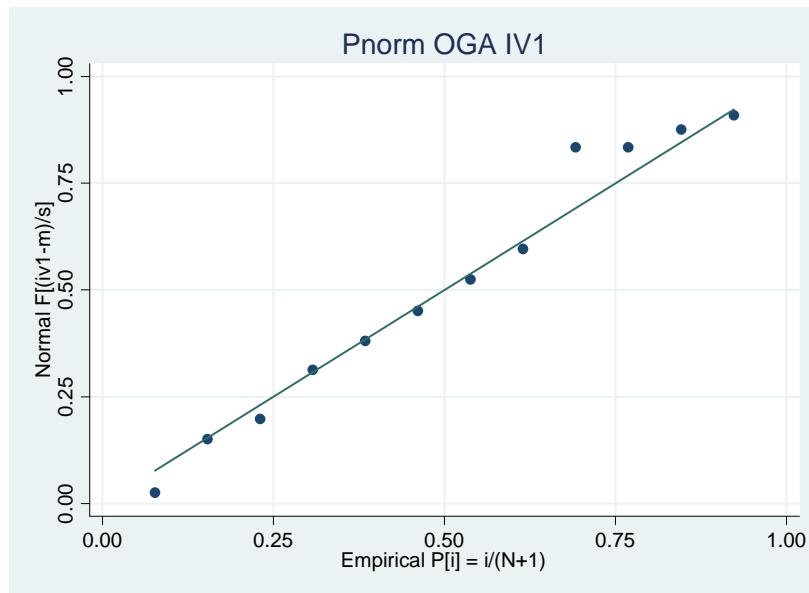


Figure 52. Probability Norm for OGA Model IV1

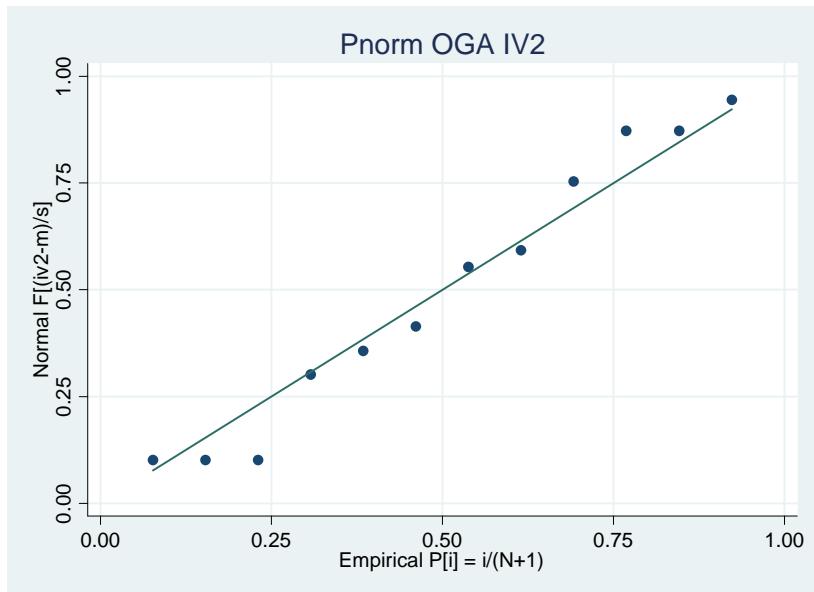


Figure 53. Probability Norm for OGA Model IV2

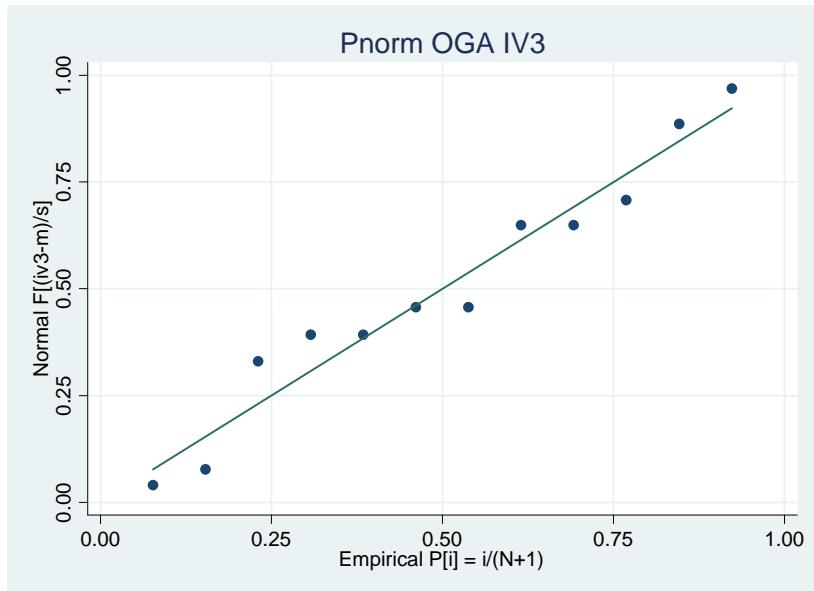


Figure 54. Probability Norm for OGA Model IV3

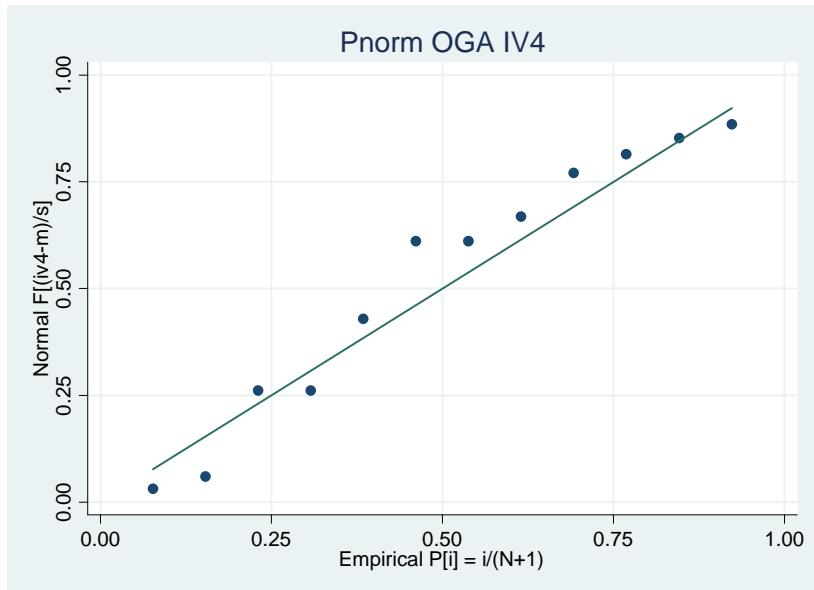


Figure 55. Probability Norm for OGA Model IV4

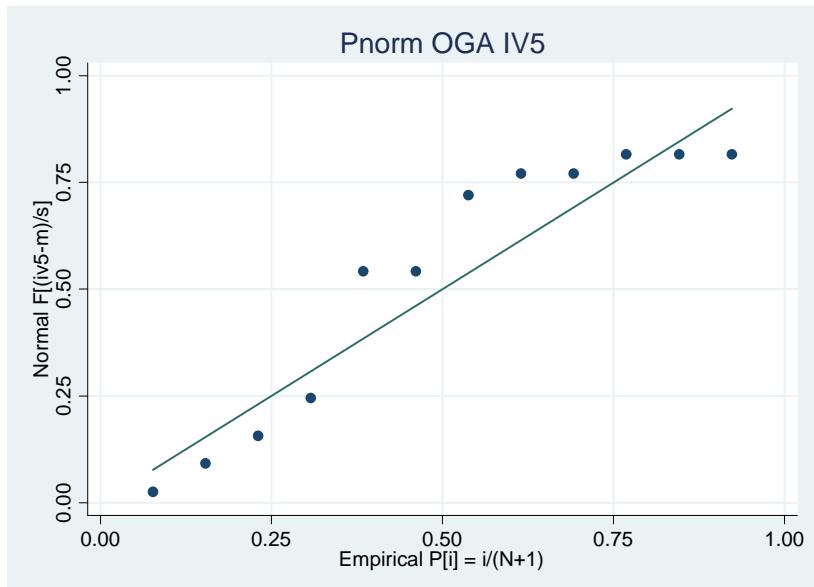


Figure 56. Probability Norm for OGA Model IV5

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of dv446

chi 2(1) = 5.46
Prob > chi 2 = 0.0195

Figure 57. Breusch-Pagan Test for OGA Model

Ramsey RESET test using powers of the fitted values of dv446
Ho: model has no omitted variables
F(3, 12) = 4.59
Prob > F = 0.0231

Figure 58. Ramsey Test for OGA Model

C. SUBSET MODEL REGRESSION

regress dv4 iv1 iv2 iv3 iv4 iv5						
Source	SS	df	MS	Number of obs = 67 F(5, 61) = 31.85 Prob > F = 0.0000 R-squared = 0.7231 Adj R-squared = 0.7004 Root MSE = .74012		
Model	87.2423833	5	17.4484767			
Residual	33.4143331	61	.547775952			
Total	120.656716	66	1.82813207			
dv4	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
iv1	.9079411	.1500555	6.05	0.000	.6078866	1.207996
iv2	.1260945	.1362902	0.93	0.359	-.1464345	.3986236
iv3	-.1098958	.1369789	-0.80	0.426	-.383802	.1640104
iv4	.1634596	.1910142	0.86	0.395	-.2184968	.5454161
iv5	.052131	.1890243	0.28	0.784	-.3258465	.4301086
_cons	-.7267853	.5401978	-1.35	0.183	-1.806978	.3534069

Table 9. DoD Model Regression

```
. regress dv446 i v1 i v2 i v3 i v4 i v5
```

Source	SS	df	MS	Number of obs	=	11
Model	21.5960251	5	4.31920503	F(5, 5)	=	22.75
Residual	.949429419	5	.189885884	Prob > F	=	0.0019
Total	22.5454545	10	2.25454545	R-squared	=	0.9579
				Adj R-squared	=	0.9158
				Root MSE	=	.43576

dv446	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
i v1	-.1992823	.2711303	-0.74	0.495	-.896245 .4976803
i v2	-.1445156	.2210992	-0.65	0.542	-.7128691 .423838
i v3	-.7499105	.331528	-2.26	0.073	-1.60213 .1023093
i v4	1.702218	.4015899	4.24	0.008	.6698978 2.734537
i v5	.7394726	.2669039	2.77	0.039	.0533744 1.425571
_cons	-1.329789	1.135135	-1.17	0.294	-4.247745 1.588168

Table 10. OGA(-) Model Regression

```
. regress dv4 i v1 i v2 i v3 i v4 i v5, hascons  
(note: hascons false)
```

Source	SS	df	MS	Number of obs	=	21
Model	34.0656882	5	6.81313764	F(5, 15)	=	9.15
Residual	11.172407	15	.744827137	Prob > F	=	0.0004
Total	45.2380952	20	2.26190476	R-squared	=	0.7530
				Adj R-squared	=	0.6707
				Root MSE	=	.86303

dv4	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
i v1	.4604487	.394896	1.17	0.262	-.3812523 1.30215
i v2	.3956732	.3363038	1.18	0.258	-.3211414 1.112488
i v3	.0673365	.3840112	0.18	0.863	-.751164 .8858371
i v4	.6065439	.3638872	1.67	0.116	-.1690634 1.382151
i v5	-.182425	.4312279	-0.42	0.678	-1.101566 .7367155
_cons	-.9245017	1.049508	-0.88	0.392	-3.161474 1.312471

Table 11. State and Local Model Regression

D. FREQUENCY ANALYSIS

Below is a table containing the frequency of responses, mean, and standard deviation for each question.

Question	Frequency of Response (%)							Standard Deviation
	1:Strongly Disagree	2: Disagree	3:Mildly Disagree	4: Mildly Agree	5:Agree	6:Strongly Agree	Mean	
Q10. This Fusion Cell's products influence decision makers.	1	4	3	14	36	42	5.1	1.1
Q11. This Fusion Cell's intelligence products reach all key decision makers.	4	4	11	30	36	15	4.3	1.2
Q12. This Fusion Cell's intelligence products reach key decision makers fast enough to positively effect outcomes.	3	7	8	23	43	15	4.4	1.2
Q13. This Fusion Cell receives regular feedback from the leadership of the organizations we support.	5	15	19	17	32	12	4	1.4
Q14. When necessary, this Fusion Cell can immediately pass time-sensitive targeting intelligence to key decision makers.	7	2	5	8	26	52	5	1.5
Q15. Key decision makers in the organizations we support regularly visit this Fusion Cell.	10	12	11	30	25	13	3.9	1.5
Q16. The members of this Fusion Cell have the proper level of training to be effective.	8	9	6	28	35	14	4.1	1.4
Q17. The other members of this Fusion Cell are top-level performers within their parent organization.	6	5	5	31	39	16	4.4	1.3
Q18. Every member of this Fusion Cell (including myself) arrived with sufficient experience to be an asset to our mission.	7	16	15	21	33	7	3.8	1.4
Q19. This Fusion Cell has representatives from the appropriate military and civilian organizations in order to execute its mission.	5	10	11	19	39	15	4.2	1.4
Q20. My parent organization carefully selects and screens the personnel it assigns to Fusion Cells.	9	12	14	18	31	16	4	1.5
Q21. This Fusion Cell has the appropriate number of personnel to be effective.	5	8	15	31	30	11	4	1.3
Q22. My parent organization properly prepared me to be an effective member of this Fusion Cell.	10	14	13	19	32	13	3.9	1.6
Q23. I make regular contact with my leadership in my parent organization.	3	3	5	18	41	31	4.8	1.2
Q24. I have access to the appropriate personnel in my parent organization to support my mission in this Fusion Cell.	8	5	7	16	37	28	4.5	1.5
Q25. I am empowered by my parent organization to make rapid decisions.	6	7	5	17	38	26	4.5	1.4
Q26. I routinely consult my parent organization prior to releasing information to the Fusion Cell.	13	23	16	15	22	11	3.4	1.6
Q27. I am required to consult my parent organization prior to offering input on critical matters.	14	32	19	17	12	7	3	1.5
Q28. My parent organization gave me clear guidance as to my role within this Fusion Cell.	10	14	12	21	27	17	3.9	1.6
Q29. My parent organization clearly understands my role within this Fusion Cell.	11	9	14	20	24	23	4.1	1.6
Q30. There is a clear decision-making process within this Fusion Cell.	6	7	5	24	32	26	4.5	1.4
Q31. This Fusion Cell makes rapid decisions.	5	8	6	24	36	21	4.4	1.4
Q32. The decision making process within this Fusion Cell is effective.	4	10	4	24	37	21	4.4	1.4
Q33. This Fusion Cell can easily access operational elements.	5	8	7	19	29	33	4.6	1.4
Q34. I clearly understand what information is required from me by other Fusion Cell members.	1	4	5	15	45	31	5	1
Q35. The norm for this Fusion Cell is open and complete information sharing.	5	5	7	17	35	31	4.7	1.4
Q36. There are members of this Fusion Cell who cannot share information.	8	17	10	15	32	17	4	1.6
Q37. There are members of this Fusion Cell who will not share information.	9	21	14	17	19	21	3.8	1.7
Q38. The leadership of this Fusion Cell enables the cell to accomplish our mission.	5	3	5	14	42	33	4.8	1.3
Q39. The leadership of this Fusion Cell encourages transparent information sharing.	4	4	3	17	38	35	4.9	1.2
Q40. The leadership of this Fusion Cell understands what I have to offer.	2	5	5	19	38	32	4.8	1.2
Q41. The leadership of this Fusion Cell understands the importance of positive interagency relationships.	5	3	4	10	31	47	5	1.4
Q42. The leadership of this Fusion Cell has direct access to key decision makers of the organizations we support.	2	3	4	16	45	31	5	1
Q43. The leadership of this Fusion Cell makes regular contact with the key decision makers of the organizations we support.	3	8	3	27	33	27	4.6	1.3
Q46. This Fusion Cell is effective.	5	7	8	16	43	22	4.5	1.4

Table 12. Frequency Response Analysis

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APPENDIX B. SURVEY

A. DESCRIPTION

Participants received an email soliciting their participation that contained a hyperlink to the survey. Potential respondents were asked to complete a 39-question survey. On average, it took about 20 minutes to complete the survey. We utilized a commercial provider, SurveyMonkey.com, as our proxy for the survey. We arranged for participants to connect to, conduct, and exit the survey via SSL in order to protect both their information and identity. We downloaded all surveys from SurveyMonkey and stored the information on NPS computer systems. The survey itself did not ask for names but did ask several questions concerning an individual's experience and background.

B. METHOD OF RECRUITMENT

We researched and found contact information for both CONUS based and OCONUS Intelligence Fusion Cells via email lists and personal contacts. We sent an email solicitation to these fusion cells. We sent out the recruitment emails on the SIPRand NIPR networks with directions on how to go to link to the survey. All information gathered for this survey is unclassified (i.e., on the NIPR network). All researchers have the appropriate level of clearance (at least SECRET) to utilize these methods.

C. SURVEY

Starting with Figure 59 is a copy of the actual survey. We encourage future researchers to contact the authors concerning future FC surveys for assistance and/or advice.

Intelligence Fusion Cell Survey

1. Informed Consent Form

To provide information regarding the survey participants legal rights and background on this study.

1. Introduction. You are invited to participate in a research study entitled "What makes Fusion Cell's effective?"

Procedures. The purpose of this research is to improve the performance of Fusion Cells. We are conducting this survey with individuals who have worked or are currently working in a Fusion Cell where the predominant focus is counterterrorism. Survey research will be done from mid-August to early September 2009. In order to participate in this project we request that you complete the following survey concerning Fusion Cells. This survey will take approximately 15-20 minutes to complete. The participants chain of command will not see the raw data associated with this study (i.e. your survey) but only summary findings.

Risks. The potential risks of participating in this study are: breach of confidentiality but we assess the likelihood of this happening as very low. Your survey data will come directly to the research team who are graduate students at the Naval Postgraduate School. The data will be retained at NPS and not further distributed. Only summary results will be presented in the findings; not individual ratings.

Benefits. Anticipated benefits from this study are a more complete understanding of how to improve the functioning of Fusion Cells, how to better prepare individuals to serve in a Fusion Cell, and improve Fusion Cell productivity. As such, this survey will benefit all branches of service in the Department of Defense, all other government agencies that participate in Fusion Cells, science, and possibly the participants.

Compensation. No tangible compensation will be given. A copy of the research results will be available at the conclusion of our study via a link to the Naval Postgraduate School's library web page which will be sent out via email to the same distribution list as the survey.

Confidentiality & Privacy Act. Any information that is obtained during this study will be kept confidential to the full extent permitted by law. All efforts, within reason, will be made to keep your personal information in your research record confidential but total confidentiality cannot be guaranteed. As you are aware, this survey is being hosted by a commercial provider (SurveyMonkey.com). This company provides this service to many academic and medical researchers as well as over 80% of all Fortune 500 companies. The data collected from this survey will be done via SSL and protected by the latest in firewall and intrusion prevention technology.

Voluntary Nature of the Study. Participation in this study is strictly voluntary, and if agreement to participation is given, it can be withdrawn at any time without prejudice.

Points of Contact. It is understood that should any questions or comments arise regarding this project, or a research related injury is received, the Principal Investigator, Dr. Susan

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Figure 59. Intelligence Fusion Cell Survey Page 1

Intelligence Fusion Cell Survey

Hocevar, 831-656-2249, shocevar@nps.edu should be contacted. Any other questions or concerns may be addressed to the Navy Postgraduate School, IRB Chair, Angela O'Dea , 831-656-3966, alodea@nps.edu.

Statement of Consent. I have read the information provided above. I have been given the opportunity to ask questions and all the questions have been answered to my satisfaction. I have been provided a copy of this form (print screen from your browser) for my records and I agree to participate in this study. I understand that by agreeing to participate in this research and clicking on the button below, I do not waive any of my legal rights.

Agree to take this survey.

Decline to take this survey.

Consent



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Figure 60. Intelligence Fusion Cell Survey: Page 2

Intelligence Fusion Cell Survey

2. Instructions and background information

Please complete this survey if you are currently serving in or have served in an Intelligence Fusion Cell (or center) whose predominant focus is counter-terrorism (e.g. DHS State & Local Fusion Cell, FBI JTTF, Interagency Task Force, NCTC, Deployed DoD Fusion Cell). You are encouraged to complete a survey for each Fusion Cell that you have served in, but please limit your answers on each survey to that specific Fusion Cell experience. Your anonymity and confidentiality will be absolutely protected.

2. Choose one:

Organization
<input type="checkbox"/> Department of Defense
<input type="checkbox"/> Department of Homeland Security
<input type="checkbox"/> Department of Justice
<input type="checkbox"/> State or local law enforcement
<input type="checkbox"/> Other government agencies (CIA, NSA, etc.)

Please specify your agency

3. Cumulative months of service in a Fusion Cell

4. Years of Government service

5. Position held in Fusion Cell

Position
<input type="radio"/> Leadership
<input type="radio"/> Analyst
<input type="radio"/> Liaison

Other (please specify)

Page 3

Figure 61.

Intelligence Fusion Cell Survey: Page 3

Intelligence Fusion Cell Survey

6. My input refers to a Fusion Cell which I:

- am currently a member of
- was formerly assigned to

If formerly assigned to; approximate date(s) of assignment

7. How many personnel are in your Fusion Cell?

8. Is your Fusion Cell OCONUS or CONUS based?

- OCONUS
- CONUS

9. Number of agencies or commands your Fusion Cell supports

Check box

1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6 or more	<input type="checkbox"/>

Page 4

Figure 62. Intelligence Fusion Cell Survey: Page 4

Intelligence Fusion Cell Survey

3. Survey

For the following questions, please choose the statement that most appropriately reflects your opinion.

10. This Fusion Cell's products influence decision makers.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

11. This Fusion Cell's intelligence products reach all key decision makers.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

12. This Fusion Cell's intelligence products reach key decision makers fast enough to positively effect outcomes.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

13. This Fusion Cell receives regular feedback from the leadership of the organizations we support.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

14. When necessary, this Fusion Cell can immediately pass time-sensitive targeting intelligence to key decision makers.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

15. Key decision makers in the organizations we support regularly visit this Fusion Cell.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

16. The members of this Fusion Cell have the proper level of training to be effective.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

Intelligence Fusion Cell Survey

17. The other members of this Fusion Cell are top-level performers within their parent organization.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

18. Every member of this Fusion Cell (including myself) arrived with sufficient experience to be an asset to our mission.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

19. This Fusion Cell has representatives from the appropriate military and civilian organizations in order to execute its mission.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

Suggested other organizations?

20. My parent organization carefully selects and screens the personnel it assigns to Fusion Cells.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

21. This Fusion Cell has the appropriate number of personnel to be effective.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

22. My parent organization properly prepared me to be an effective member of this Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

23. I make regular contact with my leadership in my parent organization.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
	<input type="radio"/>						

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Figure 64. Intelligence Fusion Cell Survey: Page 6

Intelligence Fusion Cell Survey

24. I have access to the appropriate personnel in my parent organization to support my mission in this Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

25. I am empowered by my parent organization to make rapid decisions.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

26. I routinely consult my parent organization prior to releasing information to the Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

27. I am required to consult my parent organization prior to offering input on critical matters.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

28. My parent organization gave me clear guidance as to my role within this Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

29. My parent organization clearly understands my role within this Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

30. There is a clear decision-making process within this Fusion Cell.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

31. This Fusion Cell makes rapid decisions.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

Figure 65. Intelligence Fusion Cell Survey: Page 7

Intelligence Fusion Cell Survey

32. The decision making process within this Fusion Cell is effective.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

33. This Fusion Cell can easily access operational elements.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

34. I clearly understand what information is required from me by other Fusion Cell members.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

35. The norm for this Fusion Cell is open and complete information sharing.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

36. There are members of this Fusion Cell who cannot share information.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

37. There are members of this Fusion Cell who will not share information.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

38. The leadership of this Fusion Cell enables the cell to accomplish our mission.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

39. The leadership of this Fusion Cell encourages transparent information sharing.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

40. The leadership of this Fusion Cell understands what I have to offer.

	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

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Figure 66. Intelligence Fusion Cell Survey: Page 8

Intelligence Fusion Cell Survey

41. The leadership of this Fusion Cell understands the importance of positive interagency relationships.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

42. The leadership of this Fusion Cell has direct access to key decision makers of the organizations we support.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

43. The leadership of this Fusion Cell makes regular contact with the key decision makers of the organizations we support.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree	N/A
Response	<input type="radio"/>						

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Figure 67. Intelligence Fusion Cell Survey: Page 9

Intelligence Fusion Cell Survey

4. Short Answer

44. How does your Fusion Cell measure success?

45. What percentage of your Fusion Cell's products lead to effects (e.g. kill/capture mission, arrest)?

46. This Fusion Cell is effective.

Response	Strongly disagree	Disagree	Mildly disagree	Mildly agree	Agree	Strongly agree
	<input type="radio"/>					

Please explain:

47. Which organization, or specialty, needs to be added to make this Fusion Cell more effective?

48. Please provide contact email if you are willing to allow us to contact you in the near future for follow-up discussion regarding this survey.

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Figure 68. Intelligence Fusion Cell Survey: Page 10

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